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ABSTRACT

This study presents a synthesis of the problems and questions drawn from the development of school media centers, particularly on the basis of existing school libraries. Attention is given to strategies which have already been used, to allow choice depending on local requirements, rather than suggesting ready-made solutions. Sections in the guide focus on the questions: (1) For whom and why?; (2) With whom?; (3) With what?; (4) When?; (5) Where?; and (6) How? The attached annexes contain significant abstracts from five case studies which include descriptions of the conversion of school libraries into media centers; principles underlying a project to transform a library into a media center; and a description of the setting up of a media center; as well as the text of a "Guide to the Fitting Up and Equipping of a Multi-Media Self-Instructional Centre in an Existing School" by Robert Quinot. (KP)

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Guide for the conversion of school libraries into media centres

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Preface

Unesco organized a "meeting of experts on the conversion of school libraries into multi-media centres in secondary education" at the International Bureau of Education in Geneva on 10 to 13 June 1974. A few months later, at its eighteenth session, the General Conference of Unesco instructed the Secretariat to continue to study this question and to establish a guide for Member States.

The Secretariat consequently asked Mr. Jean-Pierre Delannoy, the head of the self-documentation centre of the audio-visual lower secondary school at Marly-le-Roi (France), to submit a study on this subject both for persons directly responsible for school libraries or the establishment of media centres and for administrators of institutions of education. The Secretariat hopes that this study will serve as a useful working tool for its readers whose criticisms, advice and suggestions will be gratefully received.[1]

The opinions expressed are the author's and do not necessarily reflect the views of Unesco.

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Contents

Introduction 5

Terminology 7

Media centres: For whom? Why? 9
Media centres: With whom? 11
Media centres: With what? 15
Media centres: When? 17
Media centres: Where? 19
Media centres: How? 21

Bibliography 23

Annexes

I. The transformation of secondary school libraries into multi-media centres in the United Kingdom 27

II. The conversion of secondary school libraries into media centres: the experience of the Collège Voltaire in Geneva 33

III. The transformation of book-centred libraries into media centres at the secondary school level in the United States 37

IV. The transformation of school libraries into educational aid centres: the Swedish experience 41

V. A media centre: the self-documentation centre of the Louis Lumière audio-visual lower secondary school at Marly-le-Roi (France) 45

VI. Guide to the fitting up and equipping of a multi-media self-instructional centre in an existing school 51

Introduction

Societies and techniques change. Teaching cannot remain the amateurish tool that it used to be, because it is no longer adapted to the social, educational and psychological needs expressed by the new school community.

The author attended the meeting organized by Unesco in Geneva, from 10 to 13 June 1974, on "the conversion of school libraries into multi-media centres in secondary education" and the annual Congress of the International Council of Educational Media (ICEM), held on 1, 2 and 3 October 1975 in Glasgow, at which the problems entailed by the establishment of "resource centres" were examined.

This shows the importance which is now assigned in educational circles to the methods of teaching and learning which have been made possible by the new media at our disposal.

The reader should not expect to find here a report on the above-mentioned two meetings. This study makes no claim other than to take stock of the development of media centres on the basis of the following questions:

- For whom? Why?
- With whom?
- With what?
- When? (distribution of school time)
- Where (premises)?
- How?

The foregoing are the questions and problems which confront anyone who is considering setting up such centres, particularly on the basis of existing school libraries.

The purpose of this study is to present a clear and easily consultable synthesis of the lessons drawn from the development of such media centres.

The following are contained in annexes:

1. Significant extracts from the five case studies presented in Geneva at the Unesco/IBE meeting of June 1974;
2. A summary of the "Guide to the fitting up and equipping of a multi-media self-instructional centre in an existing school", prepared for Unesco by Robert Quinot, head of the research laboratory at the French Office of Modern Educational Techniques (Office Français des Techniques Modernes d'Education - OFRATEM), and by the Division of Educational Methods, Materials and Techniques, following the meeting of experts held in Geneva in 1974.

The author has made extensive use of the above-mentioned technical guide in preparing the present publication.

The latter does not deal with audio-visual centres or with regional or national resource centres; these will be the subject of another study carried out by Unesco and the International Council of Educational Media.[1]

Far from suggesting ready-made solutions, the author has set himself the task of listing and analysing the problems which arise and drawing attention to certain strategies which have already been put to the test, so as to allow of a wide possibility of choice, depending on local requirements.

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1. A review of audio-visual services in advanced and developing countries - Guidelines for the establishment and management of such services. (In press).

Terminology

English-speakers use the following terms:

- multi-media centre
- learning resource centre
- comprehensive library
- multi-media learning centre
- resource centre
- library resource centre
- school library/media centre
- instructional media centre
- media centre

It is proposed here that all these centres be henceforth referred to as MEDIA CENTRES (M.C).

French-speakers use the following terms:

- centre multimédia d'auto-formation
- médiathèque
- centre de documentation
- centre d'auto-documentation
- centre de resources
- centre d'étude multimédia
- centre d'auto-instruction
- centre multimédia
- centre documentaire
- centre documentaire multimédia
- centre pédagogique multimédia

The term "CENTRE MULTIMEDIA" (C.M.) appears to be the most satisfactory here, being fairly comprehensive and suggesting a place where a large variety of activities can be carried out (self-instruction, documentation, documentary research).

Consequently, reference will be made henceforth to Media Centres (M.C.) or Centres Multimédia (C.M.).

Learning to read with books and pre-recorded tapes. Alakanuk Elementary School, Alaska.
Photo: Bureau of Indian Affairs.

Print is not the only medium for transmitting information.
Photo supplied by M.V. Gaver.

Media centres:
For whom?
Why?

The changes taking place today in society and in education - advances in communication techniques, curricula reform, new educational methods - are making it increasingly necessary to develop or set up media centres in schools, both to help improve the quality of education and to facilitate self-instruction and lifelong education.

It is now generally admitted that:

- the school is only a part of the pupil's total environment;
- secondary education is tending to become a universal need, corresponding to a genuine democratization of education;
- the conditions under which learning takes place have changed. The development of communication media and techniques has profoundly modified the thresholds of perception; at the same time, children have become capable far earlier than previously of manipulating technical equipment and producing their own documents;
- the considerable development of the mass media is tending to eliminate from society any sense of there existing a hierarchy among the different media of communication. School alone still tends to maintain such a hierarchy. However, more and more people are coming to attach the same value to all educational materials, whether printed or audio-visual.

The growing importance of informal education, the gradual disappearance of the notion of accepted truth, the vertiginous growth of knowledge and its increasingly scientific and technical character, are leading to the emergence of conditions which will enable the pupil's capacity for independent endeavour to be developed while he is still at school. Henceforth each individual will have, to a greater extent, to assume responsibility for his own instruction in the context of a lifelong education in which compulsory school attendance is no more than a stage.

But existing school libraries or documentation centres are no longer fitted to meet needs other than those of already outdated patterns of instruction. From now on, under the combined impact of the development of the educational sciences and the advance of communication techniques, emphasis will have to be laid on learning and training. The organization of school libraries and documentation centres should therefore be adapted so as to allow them to take account of the changes which have occurred in recent decades, both within the school and in the surrounding world.

Most schools are still found to possess a library open to pupils, in which works are classified by author and by title, and sometimes a storeroom for audio-visual materials from which teachers, and only teachers, can borrow documents and equipment. Often, too, when the school actually possesses audio-visual aids, they are distributed among a few teachers, who are the only ones to use them.

The idea of the media centre, where printed and audio-visual materials are organized with a view to assisting self-instruction among pupils, is still far from widespread.

Such centres enable full use to be made of all teaching materials, and principally audio-visual aids; provide a means of integrating audio-visual and printed materials (pupils no longer use books alone but have access to audio-visual documents bearing on the same subject); and afford the pupil the possibility of following unaided a programme of study combining reading and audio-visual documentation.

To sum up, the resources available - printed and non-printed materials - should be organized in such a way as to assist their utilization and make it rational, having regard to the new objectives. In most schools it will be necessary to convert the existing library, or the documentation and information centre, except in cases where the setting-up of a new centre can be envisaged.[1]

> *The place occupied by individual learning (in particular, self-instruction in media centres) in the overall educational process is justified by the new conditions existing today in the world and by those particular conditions which govern the education of the individual.*
>
> Report of the French-speaking Group (Geneva 1974)

In the cases where conversion is needed, this will inevitably have to be effected in successive stages of varying length depending on the degree of motivation of the staff and on the resources available.[2] However, whatever

1. See annex: *A media centre: the self-documentation centre of the Louis Lumière audio-visual lower secondary school at Marly-le-Roi*, by J.P. Delannoy.
2. See annex: *The conversion of secondary school libraries into media centres: the experience of the Collège Voltaire in Geneva*, by L. Scherrer.

the pace at which the conversion is carried out, the problems encountered will be of the same kind.

Taking as reference point the proportion of total school time during which the centre is used by pupils, three phases may be envisaged in this process of conversion - on the understanding, of course, that intermediate situations may arise.

Phase A: Up to 10 per cent of the school timetable is assigned to the activities of the centre, which, in this initial phase, is responsible for **awakening in the pupils a realization of the possibilities open to them and for initiating them in the use of audio-visual aids.**

Phase B: between 10 and 30 per cent of the school timetable is assigned to the centre. **Activities are directed towards learning.** In addition to group activities (working groups), the pupils will henceforth be offered opportunities for genuinely autonomous individual pursuits. At this stage, the school undergoes a partial transformation which will subsequently become more marked.[1]

Phase C: The centre takes up more than 30 per cent of activities. **The school undergoes a complete transformation.** The media centre becomes the nucleus of the institution. Even if activities of the traditional type persist, they are closely bound up with the life of the centre.[2]

The setting up of a centre will therefore depend on the objectives assigned to it, the functions or activities for which it is to be responsible, its constituent elements, the facilities it offers and the tasks assigned to its staff.

For the introduction of self-instruction in media centres, the following must be envisaged:
- new timetables for both teachers and pupils,
- a new utilization and even a new arrangement of the premises,
- a new utilization of materials, which are to play a new rôle in teaching.

A media centre in a school will therefore have to perform the following functions:
- collect together all the documentation stored in the school, regardless of its material basis, and make it available to the persons using the centre (pupils, teachers, administrative staff, technicians, etc.);
- organize this documentation in such a way as to make it easily accessible and usable;
- act as an independent centre for educational activities as well as a supporting service for the general activities of the school;
- fit up the premises and arrange the equipment in a manner suited to the various functions of the centre and to its educational action;
- offer the possibility of producing both printed and audio-visual documents;
- facilitate the tasks of the staff working for the centre (teachers, documentalists and librarians, technical and general service staff) by providing them with the means of receiving and assisting pupils, guiding, evaluating and participating in their work, producing documents and managing and maintaining the centre;
- provide users - pupils and teachers - with the possibility of consulting and borrowing documents, working in groups or individually, producing and evaluating, collaborating in the processing of material and in the management of the centre.

Pupils in the schools of today have to learn to find and collect information, interpret and evaluate it, collate and use it. This is a universal educational goal. As such it has to be taken into account in all kinds of subject studies, in different learning situations, and with reference to different problems.

G. Odenstam

1. See annex: *The transformation of secondary school libraries into multi-media centres in the United Kingdom*, by M. Beswick, and *The transformation of book-centred libraries into media centres at the secondary school level in the United States*, by M.V. Gaver.
2. See J.P. Delannoy's study in annex.

Media centres: With whom?

In the traditional school the pupil had a teacher who alone was responsible for his "instruction". In a media centre, where self-instruction is the rule, an entire team is at the pupil's service, advising him, guiding him, providing him with the documents that he needs and, should the occasion arise, with the apparatus enabling him to consult them. The opening of a centre or the conversion of an existing library will therefore entail a problem of staff.

> *Although all teachers are university-trained, most of them have either forgotten or never really learnt the techniques of documentary research.*
>
> L. Scherrer

It may be useful, before defining the new functions of such staff, to consider those of the personnel in an existing establishment.

Librarians and documentalists

The recruitment of this category of staff remains a constant problem. Most countries suffer from a shortage of qualified school librarians (even to meet the requirements of traditional libraries). In many cases the school library is managed by a teacher who, often, is without any professional training in this field and who operates the library service on a purely part-time basis.

> *As in most British secondary schools, at present, the library was supervised by a teacher-librarian, that is to say, a trained and experienced teacher (in this case, of English) without any formal qualifications in librarianship.*
>
> N.M. Beswick

In most cases the librarian - or the documentalist, if there is one - is considered to be a member of the administrative staff of the school and the contribution which he is allowed to make to teaching, as opposed to that which he should be able to make, is often very small. These staff members are given practically no training in the use of audio-visual media as aids to education.

Media technicians

Similarly, those media technicians who have been trained to direct activities in a media centre and who take an interest in the work performed in schools are very few in number.

What is involved here is a new type of occupation, the need for which has come about as a result of the development of communication media and for which it is particularly difficult to make provision owing to the general lack in schools of any status or post corresponding to it. In most cases, such technicians possess know-how but have not been initiated in educational problems and are never included in the team of teaching staff.

A new type of staff

In setting up a media centre, then, new needs must be taken into account so as to define the new characteristics of staff:

- what are the different "services" that a user is entitled to expect from such staff?
- what will be the different functions and tasks of each staff member?

In this connexion, four categories of staff can be distinguished:

- administrators;
- teachers;
- documentalists/librarians; and
- technicians.

All the staff of the centre, regardless of the category into which they fall, should also be able to **organize activities**.

> *The team of permanent staff at the CAD (two seconded teachers and two documentalists) had to cope simultaneously with two tasks: to introduce a new educational system and look after pupils at the same time. The team's work was thus divided between continuous teaching activity and the systematic survey that was to lead to constant improvements being made in the new facility.*
>
> J.P. Delannoy

The new distribution of staff responsibilities in a media centre is shown in Table I.

TABLE I

Functions \ Staff	Administrators	Teachers	Librarians	Technicians
ORGANIZATION	x	x	x	x
SUPERVISION		x	x	x
PROCESSING OF EDUCATIONAL MATERIAL:				
- Selection		x	x	x
- Acquisition	x		x	
- Classification			x	
- Setting up of card indexes			x	
- Evaluation		x	x	x
MEDIA PRODUCTION		x	x	x
DISTRIBUTION:				
- Hardware				x
- Software			x	
MAINTENANCE:				
- Hardware				x
- Software			x	
ANCILLARY FUNCTIONS:				
- Secretariat	x		x	
- Reprography			x	x
FINANCIAL MANAGEMENT	x		x	

The tasks of the different categories of staff can no longer be strictly compartmentalized. The new distribution of responsibilities gives rise to new needs, and these entail a training that is different from the one that is provided at present.

All staff members, regardless of the category in which they are officially classified, must possess the following three qualities:

- aptitude for human relations (developed by the techniques of group dynamics);
- all-round ability (a "teacher" must also be a technician, a technician a "teacher");
- capacity to understand and pursue the educational policy adopted.

The staff of a media centre will thus be composed of individuals with different rôles and fields of specialization. But all of them - whether administrator, teacher, librarian or technician - will have a contribution to make to the pupil's educational advancement.

The rôle of adults:

THE NEW ROLE OF THE TEACHER

- being possessed of knowledge in a particular branch, he becomes a resource among others;

> *In a resource-based system it would seem naturally to follow that the teacher's function is to be a resource among others. Through his training the teacher possesses a certain stock of knowledge relating to the subject that he teaches. He is a source of information just as are the other sources of information made available to learners.*
>
> A. Bireaud

- he determines the subjects for study, in the broadest sense, encouraging pupils' aptitudes for learning and integrating in one coherent system resources, methods and activities so as to create an environment conducive to learning;
- he also helps in basic methodological training;

> *The aim is that teachers should cease to be indispensable and gradually withdraw into the background. This does not mean that teachers have no place in the system but that their rôle has been redefined. They were required to act as advisers, to help in the method and content, guiding.*
>
> J.P. Delannoy

- he helps in the conduct of group activities and regulates interactions within groups, which form and disband (permanent groups no longer existing). He is expected to diagnose the difficulties encountered by certain members of the groups, whether or not they affect those members alone, and to endeavour to find suitable remedies;
- he is also required to provide users with a system of self-evaluation so that they do not systematically have to call in the teacher. It is indispensable for the pupil to be able to have recourse to such a system when he is engaged in a learning process whose purpose is to make him autonomous;
- he has to produce teaching materials which will add to the stock of documentation held by the centre. It will therefore be necessary for him to collaborate closely with those responsible for the management of such documentary holdings;

> *Teachers have been asked to establish a link between the library and their own group, i.e. to notify the library of the group's needs, which it is their job to identify (for example, according to proposed syllabus changes or their colleagues' exploration of new subject areas) and, conversely, to keep their group informed on progress made in developing the library, the difficulties involved and plans proposed.*
>
> L. Scherrer

– lastly, the "solitary" teacher becomes a thing of the past. Teachers have no choice but to work in subject teams or interdisciplinary teams.

THE NEW ROLE OF THE LIBRARIAN AND THE DOCUMENTALIST

– The librarian has an integral part to play in the entire range of educational activities, and at every stage of them (preparation, implementation, evaluation). He is no longer merely the person in charge of the stock of documents.

> *All the interviews reflect a concern that the librarian begin at the very earliest stage of the programme working with faculty.*
>
> M.V. Gaver.

– To meet this requirement, documentalists must be trained who are also qualified to provide educational guidance, and whose field is no longer librarianship alone but who are prepared to act as counsellors and to help pupils in choosing their programmes of study throughout their school careers.

THE NEW ROLE OF THE TECHNICIAN

– A media specialist (by virtue both of his technical skills and of his ability to produce audio-visual material), he should no longer be merely the person in charge of the technical side but should be able to discuss educational matters with the users of the centre: teachers, pupils, teaching teams.
– To be able to discharge this new function, he must be far more than a repository of technical know-how; he must take part in the educational activities of the centre.
– He has the responsibility of showing users and teachers how to handle equipment and to produce audio-visual material.
– He ensures the upkeep of the equipment possessed by the centre.

THE TRAINING OF THIS NEW STAFF

This is not the place for attempting to solve the problems involved in the professional training of the above-mentioned categories of staff.

It may be pointed out, however, that at present most of the different types of training are concerned with one single specialization, which is incompatible with the very spirit of a media centre. The teacher is currently trained exclusively to deal with "teaching" matters, the technician to deal with "technical" matters.

> *We recommend that documentation courses and courses on the operation of audio-visual equipment be introduced into teacher-training colleges.*
>
> *We propose that incentives be offered to teaching staff actively involved in media centres. These incentives could take the form of more rapid promotion, improved status and the opportunity to attend numerous short, progressive, practical courses abroad.*
>
> Report of the French-speaking Group, Geneva, 1974.

It has become necessary for all the different categories of staff to be trained in such a way that they become "all-rounders". They must, as was said above, understand and act in accordance with the educational policy adopted in the school and have some knowledge of group dynamics, which will help to develop their aptitude for human relations and, in particular, for communication with pupils and those engaged in other occupations.[1]

The pupils

In traditional education, the class is regarded as an entity the components of which - the individuals who make it up - can only be judged on the basis of their results; rarely can teachers take into account the different needs and capacities of pupils. All children are considered to have the same learning requirements, the same aptitudes and facilities. However, there is no standard pupil and each child learns at his own pace, in his own way and according to his own needs.

The principal objective of a resource-based educational system slanted towards the development of self-culture is to provide the pupil with the opportunity of learning how to gain access to knowledge on an individual basis. What is involved here is the development of a type of education which enables the pupil to acquire information either alone or within a small group which he has joined of his own free will. For this to be possible, he must obtain the intellectual grounding which will make him independent.

What this means is that the pupil must, by way of graded activities, gradually be led to acquire autonomy. He will thus have to learn to define his needs and to meet them in his own way and by dint of independent effort. He will proceed on his own initiative, choosing his subject himself or possibly with the assistance of a teacher or another member of the staff of the centre whose collaboration he desires. The subject chosen must measure up to the pupil's expectations and correspond to the goal pursued by him.

1. At present, numerous attempts are being made to provide further training for teachers and to initiate them in the technical use of the new aids to education. Similarly, thought should be given to providing further training for technicians and to making them aware of the new teaching problems arising from the utilization of the aids which they are able to handle.

Proceeding in this way, the pupil will find himself having to make use of new information sources, to organize his research and to classify the material collected by him.

These different operations will result in his becoming capable of dealing with other situations in the future.

The foregoing supposes that the rôle of the adult will gradually become changed, so that individuals and groups are left to acquire by their own means knowledge which was previously dispensed by the teacher. The pupil will thus attain real autonomy.

This does not mean, however, that the teacher has a smaller rôle to play, but rather that his rôle is redefined. Henceforth it will be his task to guide and advise, to inform, to direct research and to answer questions for which far more extensive information and documentation will be required of him than formerly.

In addition, in order for there to be this new relationship between the teacher and the pupil, the latter too must play a new rôle in which he assumes, if not total responsibility for himself, at least a great deal more than in the traditional system.

Media centres: With what?

An inventory must first be made of current stock. Most schools possess documentary holdings in printed form (books, journals, documentary files, for instance). Many have now acquired non-printed material (slides, 8 mm. super 8 mm. and 16 mm. films, sound and video magnetic tapes, records, etc.). It is therefore necessary, in the first place, to:

- collect together such materials, irrespective of medium;
- organize them; and
- decide on the types of additional material to which priority should be accorded.

Thus, when books, printed documents and audio-visual materials are kept in a library and an audio-visual centre or a teacher's study, they should be collected together within a single media centre where indexes will be made of the various instructional resources.

Examination of these documentary holdings will result in some material being discarded and in the decision being taken to acquire other materials, which will be of two kinds:

- software (printed documents, sound recordings, photographs, films, etc.);
- hardware (all the equipment and systems which are technically necessary for the production of a message).

It should not be forgotten, when establishing priorities in regard to acquisitions, that, for the user of the centre, the main value of teaching materials lies in the information they contain.

It therefore seems wiser:

- first to select the software,
- then to consider what hardware is necessary to enable the software to be used;
- in so doing, always to have in mind the public for which these materials are intended.

However, having regard to the new objectives, the choice and arrangement of these materials, which are supposed to be aids, are effected not according to medium but according to their function in the study programme.

Following R. Quinot, we propose the following classification of the educational material necessary for a media centre.[1]

a) Information media and documents, all media used for the transmission of knowledge (books, slides, films, microfilms, maps, etc.).
b) Equipment practically indissociable from the foregoing media (slide viewers, film projectors, cassette recorders, card indexes, etc.).
c) Equipment for the production, reproduction and transmission of information.
d) Reference objects (skeleton, collection of minerals, model of internal combustion engine, etc.).
e) Tools and instruments used in the human arts and crafts (chronometer, typewriter, chisel, compass, etc.).
f) Raw or processed materials capable of being transformed (drawing paper, unexposed film, plywood, electrical wire, etc.).
g) Artifacts used in teaching (teaching machines, abacuses, simulation games, etc.).

The list of priorities and possible acquisitons having thus been established, the following questions need to be answered:

- what are the possibilities open to the school for purchasing material locally?
- what are the possibilities of outside financial assistance?
- what can be produced in the way of software using: the technical facilities, the resources, the pupils and the staff already available to the school?

Among the reasons which justify local production, the following three may be singled out:

- the financial savings that can be made;
- the needs for original documents in line with the specific requirements of each centre. This new material can be produced by teachers (one of whose tasks it now is), by media technicians and by the pupils themselves;

In addition to the teacher offering his photographic skills, another teacher from the History Department joined the team in his untimetabled periods and rapidly became not only a prominent innovator so far as materials and teaching methods were concerned but also an important counsellor and adviser of his colleagues.

N.W. Beswick

1. See annex: *Guide to the setting up and equipping of a multimedia self-instructional centre in an existing school*, by R. Quinot.

– the fact that very often the existing software has been designed for teachers (which is a reflection of educational policy over the past few decades) and cannot be of service to the user, i.e. the pupil, who decides upon his own programme of study.

Account should also be taken of the possible existence of district, regional or national resource centres, so as to avoid investing in materials which can be lent by such centres. Lending facilities should be used primarily for films and video-cassettes, since there seems to be no point in acquiring material which will be used only occasionally. Loans made by these resource centres can only enhance the value of the stock of documents held by the media centre in that they supplement it.

For more important purchases, those responsible might seek advice from national institutions or organizations which could guide them in their acquisitions.

The documentary holdings should now be organized so as to enable the user to conduct his own research among the materials offered to him. For this purpose, the existence of card indexes and reference works is more than necessary.

These card indexes, which enable pupils to follow unaided a programme of study relating to a given subject, at a given level, should be adapted in the first place to those who are to use them. The intellectual process engaged in by the user when undertaking documentary research starts with the card index. Before actually obtaining a document he must necessarily consult the card index or a reference work. For this reason, particular attention should be accorded to the setting up of such indexes. Three types can be envisaged:

– card indexes by theme,
– card indexes by level and
– card indexes by subject, listing alphabetically, irrespective of author and content, all the documentary holdings regardless of medium.

The index should be sufficiently clear to tell the pupil "what there is about" without much intellectual effort on his part. This demand for "something about ..." led to an index being compiled by subject only, regardless of field, content or medium. Cards here are in alphabetical order ("abbaye" to "Zoologie"). A systematic survey of documents produced several key words allowing for research by different approaches.

J.P. Delannoy

At present, this type of card index seems to be the one which best meets the needs of users. Having chosen the theme he wishes to study, the student wants to know what documents are available on that theme.

The index by subject, which is best suited to telling the user what he needs to know, should be sufficiently precise to facilitate his search but without spelling things out to such an extent that he does not have to make any effort for himself.

However, whatever the type of card index adopted, only one indexing system for both printed and non-printed materials can be envisaged, for it would probably be confusing to identify educational materials relating to the same subject according to different systems of classification corresponding to the different media involved (a simple visual device can be used to indicate the medium).

One precondition of the educational aids centre contributing to a greater utilization of teaching materials is for books and audio-visual media to be registered according to the same system.

G. Odenstam

Media centres: When?

Access to the centre (times)

Two possibilities are open to those setting up a media centre:
- granting access to it solely to pupils of the school;
- making it available to the entire population.

Obviously the decision will depend on the facilities installed and on local requirements.

OPENING OF THE CENTRE TO THE SCHOOL POPULATION

A media centre should first of all be open during all the hours of the week covered by the school timetable. It is unimaginable that the centre should be open to users only at certain times, arbitrarily determined.

In addition, the times when the centre is open should be sufficiently flexible to enable maximum use to be made of it: before and after classes, in the evening, at the weekend, during the school holidays.

It is therefore necessary that there always be someone in attendance; this can be achieved by means of staff rotation. It is difficult to say what would constitute the ideal hours for any centre. The best way would be to proceed according to the individual case. To begin with, the centre will be continually open. Later, following a survey and an estimate of attendance rates, opening times will be adapted to requirements.

OPENING OF THE CENTRE TO THE ENTIRE POPULATION

To facilitate use of the centre outside school hours, not only by students and teachers, but also by young people and adults not attending school, some means should be provided of gaining access to it without necessarily going through the school premises.

Consequently there should be, within the school itself, independent premises which can remain open when the rest of the building is closed. Only in this way will the non-school-going population be enabled to have access to the resources available in the best possible conditions.

Utilization and management of the centre during school hours

At present, existing libraries or documentation centres are not really integrated into the educational activity of schools and their utilization is not planned. Regarded as supporting facilities, they are not sufficiently used, and most of the time they serve only in the following ways:
- when a teacher is absent; the documentation centre is then used as a place for individual study, pleasanter than the room set aside for that purpose;
- when a pupil (or a group) leaves the classroom on the teacher's advice in order to carry out documentary research in the library; the decision for this change of place rests with the teacher;
- when a pupil wishes to carry out research outside school hours; to do this, he has to agree to work over and above his normal timetable.

It is therefore necessary that a larger proportion of the prescribed school timetable be assigned to utilization of the premises and materials of the centre and that pupils be enabled to increase at will the quota of hours available to them for that purpose. To this end, the pupil's work time should be redistributed so as to increase that part of it reserved for independent activities. R. Quinot[1] usefully breaks down work time into two unequal parts defined as follows:

A. Time assigned to group instruction or supervised activities (sports association, photography club, etc.). This part of the pupil's work time comes entirely under the responsibility of the school: curricula, timetables, staffing, financial administration, evaluation.

B. Time allowed for independent activity or study by the pupil. This covers work "at home", the use of outside resources, "study" periods in the school, varying according to the pupil's status (day pupil, half boarder, full boarder). Generally speaking, the school does not feel that it is concerned with the way in which this time is used, placing responsibility for it on the pupil and his family.

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1. See annex: *Guide to the fitting up and equipping of a multimedia self-instructional centre in an existing school.*

The following table gives an example of the conventional distribution of the pupil's work time:

TABLE II

Conventional distribution of the pupil's work time (in hours per week)	1 in school	2 outside school	TOTAL
A. Time assigned to group instruction or supervised activities	25	5	30
B. Time allowed for independent activity or study by the pupil . .	5	10	15
TOTAL	30	15	45

The ends to be achieved by a new distribution of time are as follows:

- an increase in B1 time;
- a decrease in B2 time on a priority basis;
- a partial decrease in A1 time.

This change is justified from the educational point of view since the media centre assumes responsibility for the increased B1 time.

The hours taken from the conventional teaching time (A1) and from the (more or less efficacious) independent activities by the pupil outside school (B2) are spent at the centre, which provides the pupil with the methods and means necessary for him gradually to attain autonomy. This is shown in Table III.

TABLE III

New distribution of the pupil's work time after the centre has been set up (in hours per week)	1 in school	2 outside school	TOTAL
A. Time assigned to group instruction or supervised activities	20	5	25
B. Time allowed for independent activity or study by the pupil	15 (inc. 10 at centre)	5	20
TOTAL	35	10	45

No recommendation can be made in respect of the number of "centre-hours". This number must be determined on the basis of several factors (objectives of the educational system and means available) and the decisions taken can be expected to have a number of consequences (reorganization of space, new allocations of resources, changes in the teachers' timetables, etc.).

Media centres: Where?

In order to convert a school library into a media centre it is necessary to:
- reorganize the existing space,
- redistribute the resources held,
- remodel study premises.

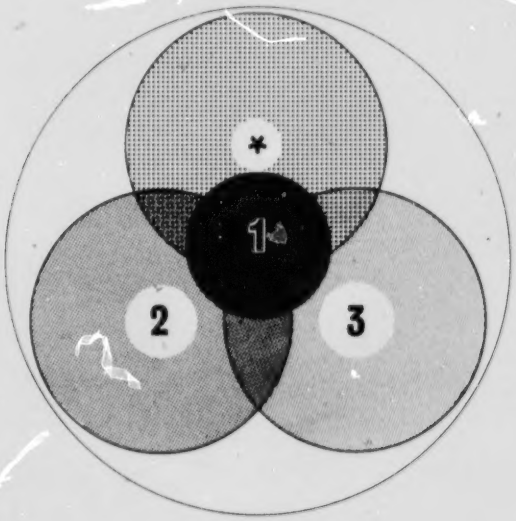
The space occupied by the media centre should be divided up as follows:
- premises for small-group study and individual study;
- facilities for the storage of teaching materials (printed or non-printed) which should be close to the premises reserved for study;
- facilities for the storage and distribution of technical materials;
- production workshops.

The study premises should provide pupils with the means of consulting printed documentation, but also of seeing and listening to visual and sound documents.

All these premises should be close to one another and be centrally located within the school.

> *The premises are close to the institution for technical aids which will also include a workshop in which teachers and trainee teachers can produce their own teaching materials. This layout facilitates close co-operation between the personnel in charge of the informative materials (the software) and the personnel responsible for the technical aids (the hardware) required in order to gain access to the information contained by the software.*
>
> G. Odenstam

The various services of a media centre therefore require a great deal more space than that which is usually granted to traditional school libraries. The principal areas, set out diagramatically below, should therefore be designed and fitted out as follows:



1. CARD INDEXES – REFERENCE WORKS
2. STORAGE FACILITIES FOR AUDIO-VISUAL MATERIALS
3. STORAGE FACILITIES FOR PRINTED MATERIALS
* STAFF-ROOM

The conversion will be effected in successive stages. The first step will be to organize those premises that are essential for the implementation of the strategies envisaged:

consultation room(s),
room(s) for group work and individual work,
card indexes,
storage of materials,
production areas.

Then, depending on requirements and available means, these premises can be supplemented by others as the need becomes apparent.

The available space has been divided up into various sections so that the different kinds of work can be carried out at no sacrifice to quality. Besides the librarian's office, it has storage facilities for books especially, but also for slides, cassettes, tapes, publications and brochures. There is open access to these facilities.

L. Scherrer

The following diagram shows all the facilities to be established and fitted up in so far as the range of possible choices permits.

"BASIC" CENTRE (in figures)

All media centres should have areas for the following purposes available to users:

1. Card indexes, reference works
2. Storage of audio-visual materials
3. Storage of printed materials
4. Production of audio-visual materials
5. Production of printed materials
6. Group work
7. Individual work.

"IDEAL" CENTRE (in letters)

If financial resources permit, areas for the following purposes can be added:

a. Administration, management, reception
b. Maintenance
c. Office
d. Distribution
e. Rapid consultation and relaxation
f. Exhibitions
g. Lectures.

Media centres: How?

A guide such as this cannot contain a conclusion. The questions raised here are too vast for it to be possible to give firm and final answers to them. In fact, the conversion of the library of an existing school into a media centre depends essentially on:

- the motivation of the teachers,
- their real desire to change their approach to education and
- the material resources available to the school.

It may, however, be feasible to reduce the possible existence of a media centre to a simple list of basic questions which the innovative team (the word "team" is important) must ask itself before setting up such a centre:

"What are the school's current resources in terms of:

- staff,
- motivation of staff,
- forms of independent activity already existing in the school,
- accommodation (premises and furniture),
- equipment,
- budget."

Following an evaluation of these resources, it will be possible to establish priorities in the strategies of conversion and to define its successive stages.

A first survey of usable resources can be made by means of the following questionnaire which is sufficiently open to cover all the possible stages of conversion.

This list of questions, which does not claim to be exhaustive, gives an idea of the requirements to be met for the opening of a media centre (be it a quesiton of conversion of existing premises or of outright creation). It makes it possible, firstly, to draw up an *inventory* of the resources which exist and which might possibly serve as an initial basis; secondly, to prepare a *plan* for conversion (or installation), acquisition, staff training, financing, etc.

In ending this guide with a questionnaire, the author wishes to show that the problem remains open and that everyone must bring to it specific solutions in keeping with his own situation.

QUESTIONNAIRE

1. Do the pupils of the school currently have any opportunity for independent activities?

2.1 Is there a sufficient number of teaching staff?

2.2 Is there a sufficient number of technical staff?

2.3 Are these two categories of staff definitely motivated?

2.4 If they are not, can such motivation easily be brought about?

2.5 Are these two categories of staff sufficiently qualified?

3.1 Does the school possess a sufficient quantity of heavy audio-visual equipment? (Inventory).

3.2 Does it possess a sufficient quantity of light audio-visual equipment for consultation purposes? (Inventory).

3.3 If the answer to 3.2 is negative, can the situation be remedied?

3.4 Does the school possess a sufficient stock of printed documents? (Inventory).

3.5 If the answer to 3.4 is negative, can the situation be remedied?

3.6 Does the school possess a sufficient quantity of audio-visual materials for consultation purposes? (Inventory).

3.7 If the answer to 3.6 is negative, can the situation be remedied?

3.8 Does the school possess teaching materials other than those referred to in 3.4 and 3.6? (Inventory).

3.9 Is the school in a position to receive assistance from a local, regional or national resource centre?

4.1 Does the school possess premises which can be used in their present condition for the purposes of consultation and study? (Inventory).

4.2 If the answer to 4.1 is negative, can some of the existing premises be adapted to that end?

4.3 Does the school possess premises which can be used in their present condition for the storage of materials? Identify them.

4.4 If the answer to 4.3 is negative, can some of the existing premises be adapted to that end?

4.5 Does the school possess premises which can be used for the production of documents? Identify them.

4.6 If the answer to 4.5 is negative, can some of the existing premises be adapted to that end?

5.1 Can the school budget provide for a media centre?

5.2 If the answer to 5.1 is negative, is the school able to obtain financial assistance for the establishment and operation of such a centre? Identify such assistance.

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Annexes

At the "meeting of experts on the conversion of school libraries into multi-media centres in secondary education", held in Geneva in June 1974, five case studies were presented:

- The transformation of secondary school libraries into multi-media centres in the United Kingdom, by Norman Beswick.
- The conversion of secondary school libraries into media centres: the experience of the Collège Voltaire in Geneva, by Lucia Scherrer.
- The transformation of book-centred libraries into media centres at the secondary school level in the United States, by Mary Virginia Gaver.
- The transformation of school libraries into educational aids centres: the Swedish experience, by Gunnel Odenstam.
- A media centre: the self-documentation centre of the Louis Lumière audio-visual lower secondary school at Marly-le-Roi, France, by Jean-Pierre Delannoy.

It seemed to us necessary to give here the most typical extracts from these texts to illustrate the ideas developed in this guide.

It should be explained, however, that these case studies do not relate to identical operations although in each instance the objectives were the same. The experiments in question take place at different levels of transformation:

- The first three texts (I, II and III) describe existing media centres which were previously school libraries.
- The fourth case study (IV), by G. Odenstam, relating to the Malmö School of Education, sets forth the principles underlying a project to transform a library into a media centre (the document was drawn up in 1974).
- The fifth text (V), describing the experience of the Marly-le-Roi school, by J.P. Delannoy, deals with the *setting up* of a media centre and not with the conversion of a library.

Lastly, the reader will find the substance of the "Guide to the fitting up and equipping of a multi-media self-instructional centre in an existing school", prepared by Robert Quinot (1975), to which reference is made several times in the present guide.

ANNEX I

The transformation of secondary school libraries into multi-media centres in the United Kingdom

by **Norman W. Beswick**
(Department of Library Studies,
Loughborough University of Technology)

In his study, Norman Beswick presents different examples of school libraries transformed into multi-media centres in the United Kingdom. The example given here deals with Codsall Comprehensive School which set up and now runs a multi-media centre to meet teaching needs, using available resources only.

Resource organization at Codsall Comprehensive School (Staffordshire)

In 1969, Codsall Secondary Modern School, first built in the late nineteen-thirties, was renamed Codsall Comprehensive School and received its first non-selective intake. In common with other similar schools in Staffordshire, Codsall was granted a modest capital sum (£3,000 sterling) by the Local Education Authority (LEA) to be spent over four years in adapting the school to its new demands. The new headmaster had considerable experience in schools where curriculum development was actively pursued and already believed that the school's new aims had significant administrative implications. He recognized that change could only be achieved with the full support of the teaching staff and that this in turn involved: "the need to give our teachers services and support and help them feel adequate to cope with the demands that education in the modern world is making on them".[1]

Thus, innovation would be deliberate, proceeding from a firm base of teacher-support. The headmaster looked for: "the achievement of a balance of teaching methods, from teacher presentation to a large group for inspirational or stimulative purposes ... to pupils being involved in good individual learning, working at their own pace and with the choice open to them of approaching their work through which ever media enabled them as individuals to learn with optimum efficiency. The ultimate aim would be complete, self-contained courses in particular subjects in the upper part of the school."[2]

Premises and resources

For such purposes, the full resources of the school in terms of materials, equipment, premises, finance and staff had to be re-examined and reorganized in such a way as to support the new major objectives. Learning materials were pooled in the library together with the book collection, and regarded as a multi-media collection for the whole school, irrespective of which department originally initiated acquisition. The materials could be borrowed by a department, sometimes on extended loan, but were indexed centrally; the principle of common use was established, as well as that of advance booking for predictable needs. All the materials could if required be studied in the library (at that time some 160 square metres, accommodating up to 70 pupils). Similarly, equipment, such as tape recorders, projectors and record players, was centralized as far as practicable, and a booking system established to maximize possible use; the only equipment permanently retained in particular classrooms or school departments was that which was in almost constant use, or was sufficiently heavy to discourage frequent shifting about the school. Not even the library retained permanent equipment; it borrowed as the need arose from the common pool, (usually stored at the back of the stage in the school hall). Simple reprographic equipment (such as a heat copier and a spirit duplicator) was placed in a room (approximately 11.6 square metres) immediately adjoining the staff room and made available together with suitable stationery and tools such as fibre-tipped pens and a typewriter for the use of teachers whose production needs fell within their own abilities. More complicated and higher quality reprographic work was centralized in a small office converted into a reprographic centre (11.6 square metres) where an electronic stencil

1. Mitson, R. "A view of resource centres", *Ideas* (London) vol. 22, June 1972, pp. 45-49.
2. Ibid.

cutter was in regular use by a technician whose job was to produce materials for teachers on request; she also made recordings of radio broadcasts; a careful system of requisitioning and consultation was established so that her work proceeded with the maximum of good will and efficiency on all sides. Photographic work, including copying and developing, was undertaken by a member of teaching staff (a music teacher) who happened to have interest and experience in such activities: a tiny room was converted into a darkroom for his use.

Staffing

The simple provision of such facilities was not in itself enough. It was also important to integrate them into a working unity, to develop an appropriate system of staffing and the proper co-ordination of activities together with the stimulation of responsible innovation. An educationalist who had recently worked with the Schools Council General Studies Project and had relevant experience in resources organization was appointed to a senior position on the teaching staff with responsibility for curriculum development and the organization of what was thought of as the "resources team".[1] Other appointments included the reprographic technician already mentioned (at first on a part-time basis) and a resources secretary. As in most British secondary schools at present, the library was supervised by a teacher-librarian, that is to say, a trained and experienced teacher (in this case, of English) without any formal qualifications in librarianship. She became an important member of the "resources team" and found no problem in including within her collection audio-visual and reprographic materials as well as books. In addition to the teacher offering his photographic skills, another teacher (this time from the History Department) joined the team in his free periods and rapidly became a prominent innovator in terms of materials and teaching methods as well as an important counsellor and adviser of his colleagues. The team was responsible for the organization of all services to resource-based and individualized learning within the school.

It must be stressed that the provision of this staffing was not an extra charge to the school. In common with other schools in the county, Codsall was and is allowed what amounts to a quota of teaching and non-teaching staff according to its size. Deployment of teaching staff is an internal matter of timetabling and agreement and Codsall applied a system of priorities; it was perhaps fortunate that the school was steadily growing, so that by September 1971 for instance there were 950 pupils entitling Codsall to some 60 or so teaching staff. It was felt important to the new learning patterns that a teacher should be available at all times in the library; therefore the teacher-librarian was freed from timetabled commitments for three-quarters of every week for this purpose; the remaining hours were filled by other members of the resources team. This meant a corresponding increase in the pressure of timetabled commitments for other teachers had to be accepted. Equally, the employment of ancillary staff in the unusual activities of resources technician and resources secretary meant that ancillary staffing in other areas of the school had to be correspondingly reduced. The school did not believe that this was ideal, but in the current economic circumstances it appeared unavoidable.

Apart from a slight increase in timetable pressure, all this took place without the lives of individual teachers being compulsorily altered in any significant way. Nobody instructed them to change their ways of teaching, nor were they required to use the multi-media library or the reprographic centre. However, the facilities were available with plenty of inviting inducements (including the headmaster's known views). No charge was made to the teacher or his department if the reprographic centre was used for the production of original material; the only charge was for the reproduction of material already produced or available. This immediately made it to the teacher's advantage to reconsider his planning to see what new support materials he could devise. Moreover, the multi-media library offered him a considerable and growing collection of materials and information sources in many formats, and it did not matter whether what he was planning was an extension of formal teaching or an experiment in individualized learning. By initially offering the teacher services which he valued (materials and production help), the "resource centre" (as the whole organization was called) aroused his interest and co-operation. Innovation is difficult and time-consuming; it calls for great confidence; the resource centre team set out to make an immediate contribution to this problem.

Production

Some visitors were surprised at the link between the library and materials production. The headmaster's own words explain the importance of production and give a hint that explains the association with the library: "Our own planned and developing courses seemed more appropriate in our circumstances to the needs of pupils and teachers ... The readiness with which ... Schools Council projects suggest that teachers may modify or supplement their packs as they wished proved irrelevant in the event. We had neither the reprographic equipment nor the technical assistance that is available to project teams ... To encourage staff to supplement the commercial material available, relating it to their own and their pupils' needs ... we have provided as much support for our teachers as possible ... Our teachers are more able to devote themselves

1. Holder, M. "Setting up a school resource centre", *Resources* (London) April 1972, pp. 6-9. – Holder M. "The place of a school resource centre in developing educational materials" *Journal of Applied Educational Studies* (Oxford), Vol. 1, No. 1, November 1972, pp. 27-30. – Holder, M. and Hewton, E. "A school resource centre", *British Journal of Educational Technology* (London) Vol. 4, No. 1, January 1973, 41-53.

to the professionally creative work of planning and thinking out their material, while the burden of completing the finished item is carried out for them by ancillary staff."[1]

Experience showed that this had beneficial effects beyond those immediately contemplated: "What wastage there is in teachers creating their own materials and making mistakes in the process is entirely compensated for by the insights they gain into material production; and their increasing ability to discriminate between high and low quality commercial items, is in itself an investment."[2]

Thus there was an important gain: the ability to create an item called upon the same perceptive qualities as the ability to assess an item for loan or purchase. In producing materials, the teacher became a more perceptive professional. Production was one mode of acquisition, with which the library has traditionally been more involved; it made sense to weld together the two modes of acquisition into one organization, which in itself recognized wider aims than either of the two activities in question.

This experience encouraged the school to continue with its resource centre activities in another field, that of in-service training programmes. Since teachers were entirely secure in their use of the reprographic and multimedia library facilities available to them (even in the use of a subject catalogue) training sessions were made available on a voluntary basis at Codsall with the agreement of the staff as a whole, using the knowledge and experience of colleagues within the school. Each week, two teachers could be released altogether from classroom commitments, by prior arrangement and at their own request, and given an intensive programme. They were shown the library, its contents and its tools (such as the indexing system); they were shown the audio-visual and reprographic equipment; the various capabilities of each item were explained, and the teachers were given practice in the use of the material. They were given general talks by the resources team director and the headmaster on educational objectives, the variety of possible teaching and learning styles and some particular opportunities and directions thought especially relevant to Codsall. Perhaps equally important was a tour of the school to see work proceeding in other subject departments, which in the busy routine of school life was something few had had the opportunity of studying other than superficially; to see one's own colleagues successfully achieving new things can be a great incentive to one's own innovation. During the same week, they were given the opportunity to create a set of materials for themselves, to use in their own work. After a cautious start, this programme became extremely popular and was accompanied by considerable improvement in both the quantity and the quality of resource-based work.[3]

Financing

Apart from its initial grant for adapting the school to the needs of its non-selective intake, Codsall necessarily had to develop its programmes within its ordinary annual budget. Happily, the LEA allowed schools considerable discretion in the internal allocation of their total funds. The disbursement of funds within the school was therefore brought into line with the rest of the programme; if resource-based work was to have a priority, then not only current equipment, space, materials and staff but also financing would have to be adjusted to the new objectives. A substantial sum was set aside each year for use in resources work, and each department's allocation included an amount which could only be spent "through" the resource centre in the acquisition of materials either by purchase or production. This necessarily meant that other aspects of the school's work suffered corresponding strains and shortages, and it is a measure of the resources team's work and the headmaster's leadership that the teaching staff in general were ready to accept this situation. It could at least be demonstrated that the resource centre offered a service from which everyone to some extent profited.

With the approach, in 1973, of the statutory raising of the school leaving age from fifteen to sixteen, secondary schools in Staffordshire received a further capital grant to provide the extra accommodation that would be necessary. Once again the school deployed its finances in accordance with total priorities; the library area was extended by approximately 186 square metres to allow more space for individual and group research; facilities for photographic and other work were improved, and closed-circuit television facilities provided. Two seminar rooms were added and other improvements included a large area (part of which could be partitioned off) for team teaching activities. All these areas, totalling 483.6 square metres, were immediately adjacent to the library, and, with the addition of staff planning rooms and an office for the resources secretary, made an admirable area for individualized work and innovatory activity.

Thus the school built up, from rooms not always conveniently situated and staff not necessarily fully trained for the purpose, an organization and a system which not only allowed but actively encouraged resource-based learning and individualized pupil inquiry. There was a supportive service for the teacher, including guidance and training. But library and resources work involves not only skilled staff but also a great deal of unavoidable labour: unpacking, sorting, shelving, checking, collating, stapling, filing, labelling, and the reproduction of index entries, to name but a few. The ancillaries quota could not cover such work and the resource centre at Codsall would never have achieved so much had it not been for their happy discovery of parents able and willing to give simple voluntary help with tasks of this kind. The team of volunteers varied from term to term, even from week to week, but

1. Mitson, *op. cit.*
2. Ibid.
3. Holder, M. "Setting up a school resource centre" *op. cit.*, p. 8.

the quality of their work was a fine tribute to their confidence in the school and the personal qualities of the resource centre staff. There is no tradition of such parental involvement in British schools, but the parents themselves were glad to help and in the process gained an insight into the workings of the school and its aims; the result in terms of community relations was a happy one.

The use made of the library resource centre at Codsall

The visitor to Codsall during the last four years would not immediately get an impression of radical attitudes or revolutionary methods. Much of the work continued in classrooms, where the desks were in rows facing the blackboard and the teacher. Further investigation however would have shown other types of activity in process. Science teaching was heavily based on materials from the Nuffield Foundation projects and similar enterprises; the pupils worked individually at their own pace in the laboratories, from worksheets and assignment sheets carefully planned to guide them through a prepared sequence of experiments, problems and concepts. Some of these had been produced in the school by the science team in consultation with the resources personnel; as well as practical work in the laboratories, the worksheets sometimes took pupils to books and other learning resources in the library. The Technical Studies Department, where such activities as metal work took place, was another eager exploiter of the worksheet approach and a heavy user of the production unit. In both these departments the teachers were able to cut down the amount of time spent in class presentation and give more attention to individuals among whom they moved as the class worked.

Science and technical studies are perhaps the subjects which lend themselves best to sequentially planned work. There are definable skills and concepts to be mastered, and the teacher is not bedevilled by the introduction of conflicting value judgements and the development of "taste" and "appreciation". The various social sciences are perhaps a middle area. Both the Geography and History Departments found it convenient to build up specialized resource collections of their own which the pupils used as a first base; the collections were indexed in the multi-media library and the contents normally duplicated in its stock (as well as available to others if necessary and convenient). Both departments made frequent use of individualized assignments as a learning method, the pupils beginning in their own classrooms and moving to the library for further material as necessary; on some occasions, the whole class moved to the library to pursue further studies. History in particular made heavy use of the learning package, a teacher-produced pamphlet including a selection of basic facts, problems, quotations and suggested sources from which the pupil could make a choice of what line he personally pursued; another history favourite was the so-called "working collections", unstructured assemblies of assorted data on particular problems and topics from which the pupil was forced to make his own selections and assessments. Study tapes, recorded from radio or by the head of department himself, were available in the library for pupils to consult, as also were filmstrips and other simple audio-visual materials. Sociology was the particular interest of the Director and a large proportion of his teaching was done through the library, using a wide variety of materials in all formats. The later introduction of video-taping facilities enabled some of the best BBC schools broadcasts on current topics to be recorded and used on several occasions for initial stimulus in the team-teaching room.

Art and music are both activities where performance is an important factor, but support materials from the the library, illustrations and recordings as well as books, played a valuable rôle. It was interesting to note that these subjects too employed the production unit, as did the English Department. In the latter case, we must distinguish between those studies and activities intended to broaden the pupil's understanding of communication activities in general (reading, writing and speaking, the press and mass media, advertising and political persuasion) and those concerned largely with appreciation and criticism of literature. In the first case, learning packages and working collections figured largely, together with recordings from radio and television; in the second, introductory pamphlets produced by the teacher outlined the problems to be tackled, some of the key concepts, editions to be considered, recordings in whole or in part available in the library, and further suggested readings. In both cases the material was personal and local in a way no commercial or national package could have been - but at the cost of considerable teacher preparation time and perhaps also sometimes of technical quality.

The effect of all these activities upon use of Codsall's school library was very marked and cumulative. At the beginning, when the library itself was in a new place and its facilities not well understood, the library and resources staff felt a need to publicize and campaign for fuller use. Within eighteen months, pressure on the library had grown so much that teachers had to be advised to book ahead whenever they wished to bring whole classes in, and to inquire beforehand about sending groups for research activity. The provision of increased space initially eased that problem but it seemed likely that this was only going to be a temporary relief. Such a degree of teacher enthusiasm for the library aspect of resource-based learning was by no means due to the hope that a class could be unloaded into the library as a substitute for teaching; not only was the teacher required to accompany classes which came to their library, but the work done by the pupils placed a heavy strain on the teacher's ability to help, guide, counsel and stimulate; it was generally agreed that such work required considerable preparation, often more than for formal teaching.

Outside observers (those from the Schools Council in particular) were able to observe that the range of activities

was very broad. Younger pupils (aged eleven upwards) were introduced to the facilities and tools available by formal and informal group projects and by induction classes in which the teacher-librarian explained particular skills such as catalogue use. Such matters were also explained by charts and displays and in impromptu small-group sessions in the library itself when a need became obvious in ordinary work. Pupils of all ages engaged with increasing skill and confidence, and soon with work-sheets or study-guides in hand; frequently these provoked the pupil to search the indexes by the subject approach and led to the use of both print materials and audio-visual items. No serious problems arose with the fact that books were shelved on open access in classified order, whereas non-book materials were normally kept in accession order in boxes and filing drawers, either around the issue-desk end of the library or in a small, accessible store-room leading off. The fact that there was always at least one member of the teaching staff available, plus the resources secretary, and perhaps a parent volunteer or an extra teacher or so, meant that few problems of supervision arose, and these usually only when a pupil required a little help with finding a filmstrip or threading it on an appropriate viewer, at a busy time (of which there were very many). Most of the work described of course took place in scheduled class periods, but the older pupils in the 17 to 18 year age group had a considerable number of "free" periods in their weekly timetable and it was normal for much of this time to be spent in the library in individual study. Although a great deal of their work was academic and book-dominated, it was notable that non-book materials were also used and that teachers began to devise individualized learning courses. No one at the school would assert that progress here was as rapid as might have been hoped, but it was a quality of the change at Codsall that it was steady and cumulative rather than revolutionary and unstable.

(May 1974)

ANNEX II

The conversion of secondary school libraries into media centres: the experience of the Collège Voltaire in Geneva

Lucia Scherrer
(Teacher, Collège Voltaire, Geneva)

Until 1969, the library of the Collège Voltaire was simply a school library. From 1969 to 1972, it was progressively transformed into a media centre. This centre has been operational since 1973. Below are extracts from the study in which Lucia Scherrer, who directs the media centre, traces the steps followed to carry out this conversion.

The merit of secondary school libraries in Geneva is that they exist. Founded at the same time as the schools, however old they may be, their organization is rooted in tradition. This tradition, however, hinders rather than helps necessary evolution.

Secondary school authorities in Geneva have been trying to introduce reform for several years. A great many questions have been raised, various guiding principles outlined and ideal objectives defined.

The present time may, therefore, be regarded as a period of transition from a long era in which the rôle of school libraries was never questioned towards a future that appears more promising. One possible proof of this trend was the successful conversion of the school library in a secondary school in the Canton of Geneva - the Collège Voltaire - into a media centre between 1969 and 1972.

In a report for school use only, the centre is described as follows:

"The Centre is primarily a place of work, where teachers and pupils alike can find the documents they need to teach or to study. One entire floor of a recently constructed annex - opened in late 1974 - has been allocated to the Centre. The available space has been divided up into various sections so that the different kinds of work can be carried out at no sacrifice to quality. Besides the librarian's office, it has storage facilities for books especially, but also for slides, cassettes, tapes, publications and brochures. There is open access to these facilities. Four booths are available for listening to recorded material. Above all, various work areas have been organized for specific purposes. One of the areas, where a measure of silence is required, is for communal study; another where total silence is imposed, is for private study and yet another is a room for seminars, enabling classes to be split up occasionally. The Centre can accommodate about a hundred people a time. It obtains and keeps available documents specially selected to meet technical requirements and, at the same time, for their relevance to the various subjects taught in the school and to the curiosity of the young about the world today. In addition to this administrative task, the Centre plays an educational rôle separate from that of the teachers, by helping both teachers and pupils alike in a variety of ways. Teachers who use it can be kept regularly up-to-date on recent publications in their particular field or in education as such. The pupils are encouraged and trained in document

Consulting the papers at the Collège Voltaire

The teacher is there to give advice.
Collège Voltaire.

research, for which purpose a thorough understanding of the library, designed as it is as a work tool, is a first step. Pupils are also encouraged to make intelligent use of basic works such as encyclopaedias, dictionaries and biographies. They are likewise encouraged to read, by means of exhibitions on a specific theme, presentations of articles and so on."

Obstacles to conversion

Paradoxically, the mere existence of the library seriously impeded and slowed down its conversion into a media centre. Although its organization and holdings were outdated, the library was nevertheless worth keeping on account of its measure of usefulness to a small section of the school community, with whatever resources it had at the time by way of staff, funds and space. To begin again from scratch would have been unthinkable: conversion was in fact begun by just one teacher on his own initiative. The rest of the teaching staff as well as the school authorities had to be won over to the idea that a larger library was needed. Conversion from within was done by stages and made heavy demands on the available staff, since some of the facilities had to be maintained for the benefit of the handful of regular users, while new and improved facilities had to be installed to serve the entire school community.

Thus it was not the teachers as a group who encouraged the development and conversion of the school library. The librarians, those other guardians of public education, could have been expected to do so.

A librarian, however, rarely has a strong position in a school.

It was not until 1973 that the librarians' training school, at the request of the secondary education authority, considered the possibility of a specialized post-graduate course for students seeking a career in school libraries. This course does not, however, train librarians as assistant teachers so much as social leaders of sorts, able to keep the younger (12-15) pupils occupied and to encourage them to read. Even in these circumstances, it is hardly surprising that to a librarian, audio-visual material continues to be an intruder.

A central authority has been set up to promote audio-visual aids in teaching at secondary education level. This authority investigates new equipment available on the market, decides what equipment is needed in the various schools and approves the schools' budgets for this purpose. Its only contact in the schools, apart from the principal and the maintenance engineer, is the one and only teacher responsible for audio-visual aids. In school communities of 100-170 teachers and 700-1,000 pupils, as is the case with secondary schools, this teacher does the best he can. He collects requests from his colleagues and passes them on to the central authority, keeps accounts, compiles lists or, at best, a few indexes and lends, or rather sets up a self-service lending system for the slides and records obtained, gradually and according to sporadic demand. This he does in the few hours weekly - usually four - set aside for him to fulfil that responsibility.

Ways and means

Winning over the school community as users is essential to the vitality of the library and a prerequisite to conversion.

MATERIALS

In view of the diversity of subjects taught (about fifteen, excluding optional courses) and of the fields covered by one syllabus (geography, for instance, is subdivided into human, physical, religious, economic and demographic geography) and given the size and diversity of the school community membership, inducing that membership to use the library is an awesome challenge. One method tried in the first instance was to invite suggestions on acquisitons from teachers and pupils. Suitable forms were printed and made available, so that suggestions could be submitted at any time.

Pupils made little use of this facility, although when they did so their suggestions were always to the point. More often than not, pupils come to the library to obtain documents which their teachers have recommended they read or listen to. Alternatively, they come in search of "something" on the widest variety of subjects, unable to quote any specific reference. In such cases, they express their needs in very general terms and librarians have to help them pinpoint those needs. Since noting and collating their requests reveals trends in their interests and throws light on the content of certain courses, the requests are at all times given very careful attention. Moreover, the fact of supplying pupils with worthwhile documentation never fails to have an impact on teacher-pupil relationships. Obviously, a dialogue with well-informed and well-researched pupils attains a higher level of interest and may go deeper.

Co-operation from teachers went beyond the informal relations between a library and individuals and was formalized at subject level.

In each school, teachers of the same subject meet to discuss teaching or technical matters peculiar to their subject. Each group of teachers elects a chairman and is provided with an office where it meets several times a year, even several times a month if need be.

Once the documents have been acquired and stored in the library, another barrier has to be overcome: the documents must be easy to locate, to obtain and to use.

From the beginning the library was kept open as long as possible, i.e. from 8 a.m. to 6 p.m. without a break, every school day.

LENDING

Because there was hardly any room in the former premises of the library for on-the-spot consultation, the library had to be a "lending" one at first, as a temporary and unavoidable measure. However, in schools where the teaching follows an identical syllabus in some classes, the relatively parallel study progress leads to a

great many people all wanting to use certain documents at the same time. To lend the documents then means depriving others of that facility. This evil was compounded by loaned documents being in pupils' homes while they were attending school. When the library moved to its new premises, therefore, a selective lending system was introduced according to type of document and the likely use to be made of it. Since very few documents are non-loanable (reference works, parts of a collection, works that are out-of-print or originals), most of them are loaned either for a fortnight (the case with works on literature and philosophy) or for the time the library is closed, i.e. overnight and weekends. Moreover, the lending period for material such as slides and cassettes is worked out by agreement between the librarian and the borrower according to the latter's needs. Thus, a decision is taken concerning each document or category thereof. This rests with the liaison teachers, in agreement with colleagues of their own group and with the teacher supervising the library.

CARD INDEX

To help users locate documents, a card index by key words was compiled, showing what was available and in what form (books, brochures, magazine articles, cassettes, tapes, wall charts, overhead projector transparencies; only slides are not indexed as yet).

If, however, in spite of card indexes and familiarity with the library holdings, a teacher or pupil cannot find what he is looking for, he then seeks the help of the librarians. The librarians should immediately be able to pinpoint what is needed, according to subject matter or the requirements of a programme. They need, therefore, a good store of general knowledge which should be constantly enriched and, in addition, to be familiar both with the reference works covering the main fields of knowledge and as well as with education as such. For this purpose, the school employing a librarian would do well to arrange for him to attend courses in various classes at repeated intervals. The school should also provide the library with sufficient staff for the librarian to be able to spend some time on his own training. It might also set up communication channels so that the librarian is not ignorant of what goes on in the school.

The above measures would encourage pupils to participate more actively in their own education. However, if that education is to develop into self-instruction, it should be provided under a system in which teachers give up their traditional rôle in order to arouse in their pupils a desire to search for knowledge themselves, according to strict working methods.

Setting up steering committees would appear useful in helping teachers to change their teaching methods. At the Collège Voltaire, in the year before the library was moved to new premises, a committee was set up "to consider ways and means of introducing a self-teaching system", i.e. the study system in which pupil becomes his own teacher. The committee wished to take concrete action and drew up various study programmes consisting of written instructions in the form of checklists, progress-recording schedules, questionnaires and self-correcting tests designed to help pupils in their efforts. This method is currently being tested in various classes at certain levels and in certain subjects.

(April 1974)

ANNEX III

The transformation of book-centred libraries into media centres at the secondary school level in the United States

Mary Virginia Gaver
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Brodart, New Brunswick, New Jersey, U.S.A.)

M.V. Gaver in her report presents several case studies concerning experiments carried out in the United States as well as in Canada. Here are four studies discussing the setting up of media centres within high schools: three involve State or public schools and the fourth a private school.

To illustrate further the relevance and validity of principles relating to the transformation of book centres into media centres, several case studies observed since 1971 are discussed here.

Each case, it is hoped, will serve to emphasize the comments and beliefs quoted from the various media directors. Multiple case studies are presented rather than one single one because of the great variation of local community situations which make up the picture in the United States. These cases include one small rural high school, two schools in a densely populated and relatively rich state and an independent (non-public) school.

Waterville, Maine High School

This school was selected for a special case study because of the dramatic growth and development that has taken place in its media centre and because the state (Maine) is one of the most rural in the United States, with financial resources falling below the mid-point of the fifty states. It is 41st in *per capita* personal income (at $3,375) and 36th in personal income per child of school age (at $14,240). Factual data for the school years 1965 and 1973 are compared in Table I.

At the start of the period of eight years of development, a number of audio-visual materials were "squirreled away" in departmental closets; the extent of such materials can be imagined given that the school as a whole had an annual appropriation of $500 for audio-visual materials at that time. One of the first steps in initiating the development of the media centre was the bringing together of these materials, already owned, into the media centre.

The major incentive to this development, however, aside from the personal concern of the media director and the school faculty, was federal aid given through two programmes, one of which provided for additional personnel and equipment, and the other for materials. (Between 1966 and 1969, the City of Waterville received $275,000 for its proposal to demonstrate what a well-equipped and adequately staffed media centre could do to improve the quality of studies.)

Table I

Description of school media centre, Waterville, Maine High School (1965 and 1973)

	1965	1973
Enrolment	1,182	1,300
Grades	9-12	9-12
Media staff in FTE*	2	11.5
Number of volumes in media centre	7,000	15,000
Number of audio-visual items in media centre	0	10,308
Number of kinds of audio-visual materials	0	25
Media centre expenditure: For books	$2,400	$4,000
For audio-visual materials	0	$6,000

* FTE = Full-time equivalent

One of the most remarkable aspects of the changes which have taken place during the eight years which elapsed since the demonstration was initiated is that, even though the federal aid has now been cut off, at least for support for personnel, the director has been able to hold and even increase the number of staff employed in the centre. In a recent study in which 105 school superintendants and 115 school librarians were polled, the following results were noted: "many Maine public school libraries have gained additional staff and additional space as a result of superintendents' visits to the Waterville centre. The most numerous areas of change reported by the visitors, are the size of audio-visual collections and a change in priorities. Other positive changes occurred in the size of book and printed materials collections, increased use of graphic arts, and better use of space and furniture."[1]

1. Joseph J. Devitt, "Do federally funded programmes really work? " *School Media Quarterly 1:* 289 Summer 1973.

Thus, while the report concludes that "no single library/media centre in Maine is likely to be able to provide resources for teaching and learning as rich as those ... in Waterville", it is obvious that the presence of this library/media centre as a demonstration has had a major positive influence outside the community it serves directly.

Two New Jersey high school media centres

New Jersey is one of the wealthiest states, near the upper end of the rank in resources for support of education. It ranks fifth in *per capita* personal income (at $4,811) and third in personal income per child of school age (at $19,464). It is highly industrialized, the most densely populated state in the United States, and both of the selected schools are in the northernmost tier of its counties which contains 80 per cent of the population and a high proportion of the wealth.

Emerson is a small residential suburb near the end of the George Washington Bridge from New York City. Its high school, built about 1960 was selected as one for study because it has consistently been a pilot establishment in the implementation of an excellent programme of media service; although its citizens support education well, it has not been a top expenditure district.

Newark's Barringer High School, on the other hand, has a library dating from 1905 which was among the very first school libraries started in the United States. The school has been moved at least once, having moved into a completely new building about five years ago. It is an inner-city school in a city with a 382,000 population.

Its library media centre is a part of a system co-ordinated at the district level since 1933 with diverse means and resources - libraries, books, audio-visual aids and radio - and with a school radio station in operation. Data on the two media centres are compared in Table II.

Table II

Data on library/media centres of Emerson High School and Barringer High School, Newark

	Emerson	Barringer
Enrolment	765	2,714
Grades	7-12	9-12
Media centre staff in FTE**	3	4.1
Number of volumes	13,500*	16,504
Number of audio-visual items	3,500*	1,626
Number of kinds of audio-visual materials	15	14
Expenditures for 1972-1973 -		
For books	$3,800	$6,325
For audio-visual materials	$2,900	$9,167

* The media director points out that lack of space has forced drastic weeding of both the book and audio-visual collections.
** FTE = Full-time equivalent.

The media centres of both schools have received recognition by state library organizations for their outstanding media programmes. The Emerson High School was selected as one of only three high schools in the state recommended by the New Jersey School Media Association for visiting and observation by teachers, administrators, and media specialists from other school districts, with the following citation: "Program outstanding for accessibility of media including both software and hardware, for student involvement in utilization and preparation of media (almost everything can be taken for home circulation), and for student preparation of a variety of indexes and bibliographies. Media centre is open on Sunday to students and members of the community."[1]

The Barringer High School media centre was selected by the New Jersey State Department of Education to receive special grants to demonstrate an exemplary programme of services in an inner-city secondary school. Its staff (in proportion to student enrolment) and its audio-visual collection are smaller at present than those of Emerson High School; however, a major effort is being made to up-grade the collection.

It is interesting to note, however, that both schools have almost the same number of kinds of audio-visual materials, although they are by no means the same assortment, as shown in Table III.

Table III

Kinds of audio-visual materials in two New Jersey media centres

Media	Emerson	Barringer
Filmstrips sound	xxxxx	xxxx
Filmstrips silent		xxxx
Cassettes	xxxxx	xxxx
Recordings	xxxxx	xxxx
Kits		xxxx
Audiotapes		xxxx
16 mm films	xxxxx	xxxx
8 mm filmloops sound	xxxxx	xxxxx
8 mm filmloops silent		xxxx
Framed art prints	xxxxx	xxxx
Globes	xxxxx	xxxx
Maps	xxxxxx	xxxx
Slides	xxxxxx	xxxx
Transparencies	xxxx	xxxx
Microfilm		xxxx
Microfiche		xxxxx
Super-8 loops	xxxx	
Video-tapes	xxxx	
Sculpture	xxxx	
Models	xxxx	
Games	xxxx	

1. New Jersey School Media Association, Development of School Media Programmes Committee. *Programmes of Media Centres Recommended for Visiting and Observation.* Revised release, November 1972. 6 p. Copies available from Office of School Media Services, 185 West State St. Trenton, N.J. 08625.

Comments by the media director of the Barringer High School also reflect the emphasis which has been placed upon teacher-administrator-media centre relationships. "Our recurrent applications for federal aid have made it necessary for me to take time to discuss curricular needs for new units of study with department heads, administrators, and new teachers at least once a year. Resultant collections and services are now being used by greatly increased numbers and for more varied purposes ...".

This situation is one in which an old, traditional, almost moribund book-centred library has been transformed into a vital and alive service in the school, functioning as a fully-unified media programme and recognized as an essential component in the educational programme of the school.

An independent school

Because of the special problems of finance facing this kind of school (non-public or private), it was decided that studying one would provide a significant addition to the other case studies. The school selected is located in a large urban centre; it has a secondary school enrolment of about 700 students (in grades 6-12) and the curriculum is heavily oriented toward the academic and traditional. Its financial support derives from student tuition fees, federal grants and grants from various non-governmental sources. At present, unlike other schools included here, the audio-visual and library programmes are administered separately, although physically adjacent; of the staff reported in Table IV, one is the librarian, one an audio-visual co-ordinator (who is also a classroom teacher); there is also volunteer parent help.

Table IV

Description of independent school library

Enrolment	700
Grades	6-12
Media centre staff in FTE	2.5 (estimated)
Number of volumes	7,000
Number of audio-visual items	0
Number of kinds of audio-visual materials (microfilm only)	1
Expenditures 1972-1973 - For books	$6,000
- For audio-visual materials	not known

Audio-visual materials, up to the present, have been purchased independently by each department and housed and used in departmental collections. The hazard of such practice was evident when a guidance teacher found that a film on primitive behaviour which she had been trying to find (she needed it for a psychology class) was actually in a departmental collection.

One of the interesting aspects of studying the media centre in this school was the objective evidence of the low impact of the present programme on both the faculty and the students. This was determined by administering a short form of the "Checklist of library services" to a 10 per cent sample of the student body, including a random sample of all classes and home room groups. In addition, a longer but still abridged form of the checklist was administered to the faculty and media staff. These measures showed that neither the students nor the faculty were aware of many services which the library did in fact provide; they also showed that there was lack of a common understanding of the programme on the part of the librarian and the audio-visual co-ordinator. Finally, the measures showed that audio-visual services, when provided, had only limited impact upon students and faculty. In spite of the low impact of these services, this did not mean that faculty or students were unaware of the **need** for effective services; in this case, the student organization was one of the real sparkplugs for action.

Steps which needed to be taken to make this an effective media centre included the following:

1. Unification of library and audio-visual programmes in housing and cataloguing, storage and distribution, administration and services;
2. Employment of additional staff members, one to be a media director and one a full-time clerk;
3. Establishment of an in-service education programme for both faculty and media staff to provide for:

(a) observation of exemplary library/media programmes and

(b) team work in development of instructional plans for use of media in specific units of instruction, concomitant with up-grading of both services and collections.

With such steps, it should be possible to transform this library into a media centre, functioning as part of the educational programme.

(May 1974)

ANNEX IV

The transformation of school libraries into educational aid centres: the Swedish experience

Gunnel Odenstam
(School Consultant, National Board of Education, Stockholm, Sweden)

In 1974, Gunnel Odenstam presented a project concerning the setting up of the media centre at the Malmö School of Education. The notes which follow, extracts from this report, do not therefore express the objectives behind such a project but rather illustrate the conditions involved in the transformation of a library into a media or educational aids centre.

Experimental activities with educational aids centres will begin on 1 July 1974 at one of the Swedish schools of education under the supervision of the National Board of Education. With the expansion of the Malmö School of Education, premises have been converted for an educational aids centre. The layout of space provided for teaching aids is sufficiently flexible to allow for the integration of the library's book resources with the books and audio-visual media belonging to the specialized departments. The problems which will be encountered in the development of the educational aids centre at the school of education are comparable to those encountered in an upper secondary school. I shall therefore proceed to a description of the educational aids centre which the National Board of Education is projecting in Malmö.

The School of Education Library today

At present, teacher-training takes place after the secondary level in special schools of education or at universities. The training of certain teacher categories comprises a combination of university studies and school of education courses. Whatever the type of institution in which training occurs, it is important for the education to proceed in the spirit of active investigation and experimentation traditionally associated with higher education and research. Another distinctive feature of teacher-training is that it is aimed both at the acquisition of theoretical knowledge and at the practical implementation of that knowledge in a future vocational context. Accordingly, the use of various means and methods is a central component of teacher-training.

Obviously the teacher cannot rely solely on books in his task of stimulating pupils. He needs a corpus of different information media. Since 1968, all schools of education in Sweden have been provided with special centres for technical aids to teaching. Thus, all schools of education in Sweden have a library, a centre for technical aids and a collection of teaching materials belonging to each department. The shortcomings now discernible in teacher-training with regard to literature and teaching materials are not concerned primarily with any lack of means and materials. Rather, the inadequacy lies in the use to which these media have been put: they have not been given optimum utilization. Media as such are not always rationally organized. As a result, the utilization of media in teacher-training is not rational either, which in turn means that the supply of information is not always as good as it could be.

The library of the school of education, which at present is the largest unit supplying media, serves three main purposes. Firstly, it is a reference library for trainee teachers and their lecturers and tutors. Secondly, it is a specialized library for educational research and development, and finally, it is a school library in the same sense as the libraries of comprehensive schools and upper secondary schools, which also makes it a laboratory for the trainee teachers in their teaching practice and studies of methods. These three purposes overlap to a certain extent and again to a certain degree, they involve the book and media resources of the various departments.

The rôle of an educational aids centre

These centres aim to increase the opportunities enjoyed by trainee teachers working on an experimental basis and thereby enable them to become proficient in library and information techniques. This will help make it possible for comprehensive and upper secondary school pupils to practise locating information in all subjects and for different teaching methods to be applied independently of one another as envisaged by the curricula. The attainment of proficiency in library and information techniques will increase the pupils' prospects of coping with the "flow of information" subsequent studies and throughout their eventual careers.

The prerequisites of an educational aids centre:

- sufficient personnel must be placed at the disposal of the library to enable it to cope with the additional tasks connected with the purchase, registration, storage and lending of audio-visual material;
- the floorspace of the library premises must be calculated, distributed and equipped with a view to the preservation of a large quantity of media and to the need for work places near the teaching materials.

The Malmö School of Education has premises which allow for experimental activities. The spaces available are of sufficiently flexible design that the integration of the book resources of the library with the books and audio-visual media contained in the various specialized institutions will probably be feasible.

The premises are close to the technical aids centre which will also include a workshop in which teachers and trainee teachers can produce their own teaching materials. This layout facilitates close co-operation between the personnel in charge of the software - the information - and the personnel responsible for the hardware - the technical aids which give access to the information.

A survey carried out by a working party at the school of education consisting of teachers, trainee teachers, the librarian and the teaching aids supervisor resulted in this allocation of premises for teaching materials taking into account the need for co-operation between the services. Throughout 1973, the working party co-operated closely with the planning department and the teaching material section of the National Board of Education. These contacts led to a proposal for the unification of the functions of the library, the technical aids centre, the workshop and the departmental educational aids centres to form a single educational aids centre. To this end, the working party carried out a general analysis of the function of the educational aids centre as well as detailed analyses of the functions of its various components.

Personnel requirements

The organization and running of an educational aids centre will require more personnel than the library has at present. On the other hand, the institutions will be relieved of tasks connected with the organization and handling of teaching materials. The total utilization of resources will be greater because the trainee teachers will enjoy greater opportunities of using the material. The increased personnel costs will thus be matched by the increased use of the teaching materials. In addition, the need for duplication (purchasing the same material for a number of departments) will probably diminish.

Organizational and administrative changes

The introduction of an educational aids centre entails new administrative and organizational tasks, e.g. routines for information concerning audio-visual media on the market, purchasing, storage, registration and loans of audio-visual material and procedures for the integration of printed and audio-visual materials.

Materials

The information available in Sweden concerning audio-visual media on the market and annual additions to the product range is scattered and elusive. There is no collective, systematic list available of various categories of audio-visual media. Each producer issues his own catalogue and different producers apply different registration principles. The service organization of the Swedish public libraries, the Library Service Agency, has improved this situation by applying the same principles to the classification of audio-visual media as are applied to the classification of books.

There are also considerable difficulties involved in obtaining information concerning contents and quality because audio-visual media are not reviewed to any great extent. Here too the Library Service Agency has sought to improve matters by introducing reviewing activities on a minor scale.

Selection and purchasing

Selection is made more difficult by lack of information concerning audio-visual media. Co-operation between heads of institutions, the librarian and the teaching aid supervisor should create optimum conditions for a proper selection of media.

It should be possible for audio-visual material purchasing routines to be co-ordinated with other purchasing routines. The audio-visual sector does not have any counterpart to the "joint binding" service provided in the book sector by the Library Service Agency. Through this service, libraries are kept regularly informed of books being published. They can then place advance orders and have the books delivered to them in special library bindings complete with catalogue cards at about the same time as the books appear in the bookshops. The joint binding scheme also incorporates a reviewing service. The educational aids centre experiment may conceivably accelerate a development of service amenities in the audio-visual sector with a view to the needs of both schools and public libraries.

Storage

The integration of books and pictorial and sound material can give rise to various problems where storage is concerned. The storage units available in the Swedish market are seldom flexible enough to permit the mixed display of different types of media. An inventory should be made in this respect of fittings, furnishings and equipment on the market.

The question as to how far integration should go must be studied carefully in both educational and practical terms. The ideal, of course, would be for all material in a particular subject sector to be assembled on the same set of shelves, but in view of the different shapes of the media involved, the considerable differences of height, width and depth, of stability and other properties, this is hardly a practicable proposition. A well-articulated registration system including alphabetical and subject catalogues and keyword indexes will make it possible for teachers and pupils to find out where all the material in a particular subject sector is to be had.

Lending

Lending routines should be reviewed and adjusted: (a) to borrowers' requirements; (b) to the new media.

Here one is immediately faced with problems. How is one to resolve the conflict of interests whereby the teacher requires constant access to particular material for teaching purposes while the trainee teacher needs the same material to work with in the educational aids centre or home? In certain cases, the question of one or more copies of the material will have to be considered if it is very frequently used. The aim must be for the resources of the educational aids centre to be used by as many people as possible on as many occasions as possible, without anyone being denied the use of a book, a tape, a set of slides, etc. at the very moment when he needs them most.

ANNEX V

A media centre: the self-documentation centre of the Louis Lumière audio-visual Lower Secondary School at Marly-le-Roi (France)

Jean-Pierre Delannoy
(Head of the Centre)

The purpose of the case study of which significant extracts are given hereunder is not to analyse the conversion of a school library into a media centre but to describe the setting up of such a centre. The reason why a fairly large part of the study is reproduced here is that the problems which arise are often identical in the two cases. Then again, the presence of the most favourable conditions can but bring out more clearly the problems involved in the very existence of a media centre. The following extracts are therefore very directly related to the considerations set forth in this Guide.

The Self-Documentation Centre of the Louis Lumière Lower Secondary School at Marly-le-Roi is generally known as the C.A.D. (Centre d'Auto-Documentation). These initials are used throughout to differentiate it from the C.I.D. (Centre d'Information et de Documentation) to be found in lower secondary schools.

Background

Since 1966, the Marly-le-Roi Lower Secondary School has aspired to meet three kinds of need:

Demographic: population growth, the increase in the need for education and the generalization of secondary education, lead inevitably to an increase in the number of teachers and also in the instruments of information;

Cultural: the growing importance of "parallel education", the continual increase in news, the fluctuation of truths and the rigidity of the educational system in a changing world mean that education must acquire "cultural mobility" and take account of the outside world;

Technological: as a testing ground for audio-visual research enabling a study to be made in relatively precise conditions of the ways in which collective messages work and as a place for the experimentation of the fundamental changes in education brought about by the systematic use of communication technology, the Marly-le-Roi School has centred its innovation on audio-visual techniques; group instruction is therefore provided by means of closed-circuit television.

Why a self-documentation centre?

As early as 1966, thought was given to the possibility of personal work by pupils integrated into their school timetable, individual study being facilitated by learning

Audio-Visual Lower Secondary School, Marly-le-Roi (France). Pupils at work in one of the rooms of the Self-Documentation Centre. Photo J.P. Delannoy.

Audio-Visual Lower Secondary School, Marly-le-Roi (France). Reading room in the Self-Documentation Centre. Photo J.P. Delannoy.

Audio-Visual Lower Secondary School, Marly-le-Roi (France). Using the master files.

laboratories, by documentation sectors comprising audio-visual or printed materials where pupils could betake themselves for periods of individual work coming within their school timetable ("full teaching time"). For even with an audio-visual system, it is the teacher alone who manipulates the sources of information. When he no longer exercises personal management of these sources, it is still he who makes a selection among them and discusses them at meetings with other members of the teaching team, and he who keeps a close check on the information thus provided. What is applied to the pupils is still a treatment, administered in doses specifically prescribed by the teacher in accordance with a prescription decided upon in common by the staff.

Following the realization of this fact, a group was set up in 1969 to study the establishment of a multi-media self-documentation centre. The aim of this group was to increase learning procedures. This meant having recourse to all the new educational media, to all the communication techniques, so as to help the pupil to achieve self-fulfilment.

In an institution endowed with the modern communication media allowing the storage of information (for knowledge can itself be stored on a medium), the monopoly of knowledge is done away with.

Equipment

Furniture: Here it must be said that, for budgetary reasons, it has not been possible to purchase all the furniture originally planned. There are still no carrels or cubicles. Most of the rooms are equipped with individual mobile tables, which allow groupings on an *ad hoc* basis. Other rooms are equipped with larger tables, which are more suitable for group discussions and debates.

Audio-visual documents are kept either on ordinary shelves (films) or in low open containers with only one level (slides) so that they can be consulted by several people simultaneously, which is not the case with the usual cabinets with drawers.

These containers are also used for records. Tapes are kept in pigeon-holes. As for printed documents, they are kept on the usual type of shelving which lines the inner wall of the room in which printed material is stored.

Audio-visual materials: Here a distinction must be made between two types of material:

- immovable material, comprising five television sets with large screens for group messages or messages intended for a group, and six individual television sets installed in six booths for audio-visual consultations. These are used for individual viewing when broadcasts are made on request. All this immovable equipment is worked from the school's video studio;
- light material, directly available to the pupils, comprising:
  forty-five cassette tape-recorders (+ 1,200 cassettes),
  three projectors for film strips,
  four projectors for 8mm. and super 8 films,
  ten viewers for slides,
  eight viewing tables for slides,
  one wire recorder,
  one record-player,
  two overhead projectors,
  ten 8mm. projectors with built-in screen.

The above material is borrowed by pupils from the storage centre, used in the various rooms of the C.A.D. and returned after use, so that there is a constant "circulation" of these pieces of apparatus.

Documentation: In setting up the stock of documents, certain contingencies had to be borne in mind:

- All the documents would be directly accessible; being frequently handled, they would have to be strong, or be strengthened.
- These documents were going to be used by a known school population. The stock ought therefore to be established in relation to its potential users in the immediate future. How, then, was the choice to be determined? It had to range from documents dealing with a single subject to those of a multidisciplinary character. The level of the documents had to be within the understanding of their users. Before any orders could be placed, lists had to be drawn up. They were prepared in two stages.

We had to remember that we come under a particular educational system and that we are obliged to "respect" the official curricula. Each "subject-team" (group of teachers working in the same subject) therefore began by drawing up a list of multi-media documents in its field, with due regard to the curricula, the known tastes of the pupils, the aspirations of the teachers and their knowledge of various types of document. These lists were collected together. It was soon apparent that everyone's requests had made in the light of his own subject, and that there was virtually nothing of a multidisciplinary character. Consequently, it was necessary to add to the lists, make them less "academic", bring them more into line with the users' requirements. This was the work of the documentalists.

Organization of instruction

The timetable: In theory, all French secondary schools possess a documentation centre (documentation and information service), managed and directed by one or more documentalists, depending on the size of the school. These documentation centres are little used, since they do not constitute one of the focal points of the educational system.

To enable the media centre to be used on a regular basis without increasing the number of hours of school attendance, only one course was possible: to reduce the number of hours spent in class.

Consequently, five subject-teams deliberately "gave up" some hours of class tuition devoted to group activities, as a contribution to the establishment of a quota of ten-and-a-half hours to be devoted to independent activities.

The pupils are personally responsible for the management of this quota of time and for planning the use to be made of it. Accordingly, it is impossible to say that, on such and such a day, there is an hour of biology, for instance, at the C.A.D.

Each pupil works at his own pace, in a field chosen by himself, at a content level keyed to his own rate of progress. It can only be said, then, that "he is at the C.A.D.".

Furthermore, the hours accorded by the subject-teams to the C.A.D. freed the teachers concerned, thereby enabling them to take part in the teaching activities within the centre.

The card index - the processing of documents: The card index is one of the cornerstones of documentary research.

A very simple type of card index has been established by means of which it is, however, possible to isolate visually the cards relating to one particular subject without separating them physically from the rest of the card index (thereby doing away with the problem of putting them back into place).

Audio-Visual Lower Secondary School, Marly-le-Roi (France).
Choosing slides.
Photo J.P. Delannoy

These cards can be consulted in their entirety, making it possible to identify the different documents relating to a given subject (regardless of medium) without their being moved out of place, though they are visually isolated.

The cards are in different colours, each denoting a particular medium and thereby indicating to the user the storage place where the document he needs is kept. The reference number of the document, given in the storage place, is also shown on the card, so that materials can quickly be located.

Staff

The "permanents": For this new facility a team was necessary which would be responsible for teaching, co-ordinating activities, ensuring the compatibility of objectives, managing the documentary holdings and instructing pupils in the use of the new aids made available to them. Over-all organization was necessary. This team consists of two teachers (one of literature, the other of science) who work full-time at the centre, and three documentalists. The work of this team of "permanents" is divided between continuous teaching activity and the systematic survey which is to lead to constant improvements being made in the new facility. The members of the team thus have to cope simultaneously with these two tasks; during the same day, going from a meeting on the budget to a meeting of a subject-team, arranging for equipment to be repaired, giving assistance to pupils "lost" in the card index, attending a seminar on the evaluation, reception and recording of new documents, showing teachers from outside around the centre, etc. The distribution of tasks between the members of the team (management of audio-visual materials, processing of documents, keeping the card index up to date, correspondence, attendance at subject-team meetings) obliges the permanents to act as administrators of the centre while at the same time wishing to teach.

These permanents are not specialists and are not attached to a particular group of pupils by virtue of any arrangement outside the C.A.D.; users can go to them for assistance, talk freely and even chat with them; it is they who are mainly responsible for guiding pupils.

The "specialists": The new organization of school time liberated teachers, enabling them to reconsider their rôle and to abandon their monopoly of knowledge. The aim was that teachers should cease to be indispensable and gradually withdraw into the background. This does not mean that teachers have no place in the system but that their rôle has been redefined. They are required to act as advisers, to help with regard both to method and to content, to become guides rather than remain conveyors of knowledge. Beforehand, it was easy to define the new rôle of these teachers. But, once the centre was opened, numerous problems of approach were posed by this new strategy. "Help", to be sure, but how? Guide rather than inform, advise rather than dispense knowledge. A new rôle had therefore to be defined and adopted. And it should be said at once that a relative harmonization of

attitudes was not achieved in the preparatory phase but only in the course of time.

Give aid? But that entails distinguishing right from the beginning between method and content. And then, how should aid be given? Should the teacher wait for the pupil to come to him and be available as a consultant? Or should he, on the contrary, involve himself in the pupil's work as a matter of course and risk being meddlesome? With time, and with the help of meetings, a *modus vivendi* has been found whereby pupils can see the specialists at times chosen by the pupils themselves for "minimal" consultations or interviews, but this in no way rules out the possibility of more frequent casual meetings as the need arises.

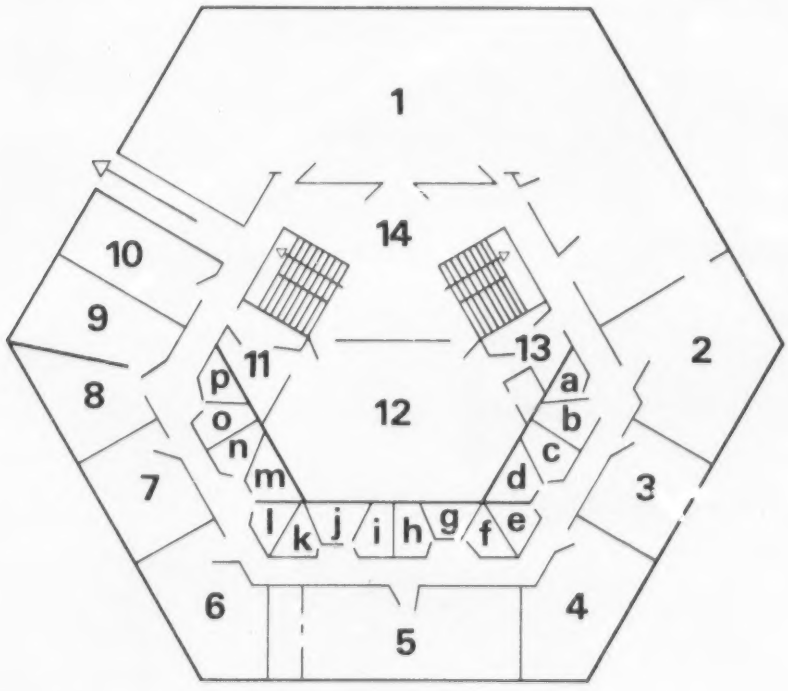
Specific productions: Documents had to be produced, too. Often, those that existed were not satisfactory. Or there were none. The teaching teams started off by producing a number of specific documents intended to guide the pupils; this was mainly done as and when the need became obvious.

In the case of existing documents, "translation" was first of all necessary. In biology, to give one example, the team had to rewrite most of the explanatory notes attached to slides and 8 mm. or super 8 mm. films (the original notes being intended for teachers).

Then, owing to the obvious inadequacy of the range of documents obtainable commercially, a means had to be established whereby the pupil could gain access to knowledge without always having to rely on the teacher's direct assistance. The language teams consequently put together a number of "guides" keyed to the teaching methods envisaged. These guides provide the pupil with linguistic support, audio-visual assistance in respect of vocabulary, guidelines for the study of texts and a set of graded exercises permitting different approaches according to the level attained by the person using the guide.

Similarly, other teams established a considerable number of guides for individual work. Some of these guides are accompanied by slides specially produced for that purpose. Each of the guides is classified by subject of study and indicates to the pupil the order in which he should proceed with the work proposed and the documents available for consultation; it also contains prescribed exercises along with answers to enable the pupil to correct his own work and an indication of the time necessary for the work to be performed. The work or montage carried out can be criticized (by the pupil concerned or by other pupils) by means of a specially designed card.

Lastly, "autonomous work packages" have been produced in three subjects (biology, history and technology). They have been tried out and are now being used in the centre. This material is designed to be used by one pupil (or a group of three at the most). It provides a means of tackling or going more deeply into a chosen subject. The pupil has access to all the necessary teaching aids (documents or slides), goes as far into a subject as he wishes, or as his ability permits, and supervises his own work. He thus chooses his subject of study, determines its scope, regulates his rate of progress by choosing among the documents proposed, exercises self-supervision at each stage and can always, if he so desires, have recourse to an adult.



Plan of the C.A.D. at Marly-le-Roi

"Given the original objectives, it was necessary to have premises adapted to the strategies envisaged. The centre is designed around three main points:

- the card index unit on the main thoroughfare (the lay-out of the centre is such that the pupil must pass by the card index cabinets);
- the reading room, with individual work places for 100 pupils. All printed documents are kept here (301 square metres);
- audio-visual storage area where all non-printed documentation is held.

Around this central area there are eight rooms for group work. Of different sizes (between 26 and 66 square metres), they provide pupils with the opportunity to get together in more or less numerous groups according to:

- the activities undertaken,
- the work set-up, and
- the equipment.

In addition, sixteen soundproof booths for audio-visual consultation each enable a maximum of three pupils to consult multi-media documents (sound recordings for instance) without disturbing those around them.

Two offices are reserved for the teaching team: one office shared by all the team (52 square metres) and one office for the secretariat (12 square metres).

There is no staff room, which means that the teachers can in fact be called on at any time."

Description (cf. plan)		Number of work places	Equipment	Area in square metres
Reading room	1	100	–	301
Audio-visual storage	12	–	Multi-media	100
Card index	14	–	–	65
Group work-rooms	3 and 7	12 + 12	TV projector with built in screen	26 + 26
Group work-rooms	4	16	TV projector with built in screen	38
	5	20		66
	6	20	TV projector with built in screen	38
	8 and 9	8 + 16	TV projector with built in screen	52
	10	10	TV projector with built in screen	20
Offices	11 and 13	–	–	12 – 12
	2	–	TV projector with built in screen	52
Booths for audio-visual consultation (a to p)		48	Multi-media	85
		262		893

Towards a new educational system?

It is difficult to see how the classroom and the C.A.D. should relate to each other. Should the two types of activity be kept strictly apart, or should the work performed in one context be connected with or determine the work done in the other? Can such a thing as conventional "classwork" still exist when there is the C.A.D.? If not, what can be done to remedy the situation? In other words, how can one ensure that there is interaction between the two types of activity, that they are complementary and not systematically pursued in opposition to each other, thereby causing a dangerous breach?

Such a system, if fully applied, calls in question the very structures of the school and of education as currently conceived. Is it possible, on the basis of present legislation and responsibilities, to adopt wholeheartedly such a system? Is it possible as of now genuinely to offer a structure which allows autonomous endeavour?

In such a context, the teacher is obliged to modify his rôle, to reconsider his task and, from being a mere repository of knowledge, to become a source of methodological aid. Such a transition presupposes a radical transformation of the educational act and consequently a change in the teacher's "mentality". The latter must therefore be prepared to adopt this new approach to education and be trained accordingly.

Then, too, the objectives pursued in each of the subject areas must be brought into line, and the differences in approach necessitated by the different contents (to restrict ourselves to content) must not be such as to result in different and even diametrically opposed attitudes being taken to these objectives. The relative importance assigned to each objective must be the same in every subject area.

The way in which time is used must also be reconsidered. Traditional notions of "profitability" break down and are replaced by an entirely new conception of the way in which a given number of hours can be used. If to "waste time" means something here, it no longer means the same "something" as it did in the previous system.

As a teaching facility intended to contribute to the democratization of education, the C.A.D. points to the desirability of an educational system no longer founded upon the "teacher". It is a place where a transfer of power takes place; it affords everyone the opportunity to assume responsibility, and it exemplifies the virtues of a learning society based upon trust.

(April 1974)

ANNEX VI

Guide to the fitting up and equipping of a multi-media self-instructional centre in an existing school

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This technical guide contains the gist of a paper published after the meeting of experts in Geneva, dealing with the material and organizational problems involved in the establishment of a media centre.

1. Introduction

This study is an organized synthesis of the main ideas from a guide to the fitting up and equipping of multi-media self-instructional centres, published as a supplement to the work of the meeting of experts held at the International Bureau of Education in Geneva, in June 1974, to consider the conversion of school libraries into multi-media centres providing self-instructional resources for individuals and facilities for the community as a whole. It is intended primarily for general and technical secondary schools and for teacher-training institutions in the developing countries.

2. Objectives and limits of the study

2.1 - The main objective may be summarized as the gradual conversion of a traditional school through the introduction of individual learning methods (with emphasis on the autonomous processing of information and the production of material for individual requirements).

Two essential features should be borne in mind:
a) The multi-media self-instructional centre provides both the main stimulus and the material basis for this conversion.
b) Optimum use should be made of existing fixed and movable equipment and facilities.

2.2 - The deliberately restricted and, on the whole, practical objectives of this guide, by comparison with the much more extensive objectives which were adopted by the experts, and also the experimental presentation of the main part of the guide (the quantitative analysis card index) lead us to request a somewhat special status.

2.3 - Our contribution to a work such as the present Guide is limited to suggesting instruments.

Our intention has been, on the basis of a few simple educational assumptions (for which a consensus is required at the outset), to establish tables which would use a combination of equally simple analytical and computing methods.

A very free use of these tables (acceptance, rejection, adaptation) does not appear necessarily to lead to any particular model for a media centre.

We confined ourselves to examining some of the values which can be accorded to the dependent variables: the allocation of premises, new forms of pupil activities, a redistribution of working time, the functional adaptation of the space available, the use of equipment, etc.

2.4 - *A priori*, a statement of the over-all specifications for a multi-media self-instructional centre may be reduced to the following five propositions:

A. The school already exists.

B. It is a school of a traditional nature (architecture, equipment, educational methods, staff training, etc.).

C. The main objective is the introduction, development or general extension of self-instructional methods.

D. One or more self-instructional centres are grafted on to the school. Their main functions are:
- to enable the pupil to accede to and process information;
- to promote the acquisition by the pupil of control over the instruments and methods which will make him capable of working on his own.

E. The school continues to exist and to give priority to all its institutional functions.

The results of continuing assessment make it possible to take decisions with a view to regulating the process of the gradual conversion of the school, attributable to the multi-media self-instructional centre.

A continuing dialectical relationship does in fact grow up between what already exists and what will exist in future, involving a network of interactions the efficiency of which, given the human and material contingencies, is relatively foreseeable but rarely controllable.

2.5 - It is comparatively easy to design and even to develop a new school, in accordance with new educational assumptions.

In all the countries of the world, this is borne out by some successful examples which are as admirable as they are exceptional, particularly as regards media centres. From this we draw two conclusions, which are only apparently contradictory.

a) Schools designed and fitted up from the outset for information and self-instructional activities cannot be taken as models (particularly as regards their structure, the functional distribution of space and facilities, and the planned development of self-instructional activities).

b) The methods and facilities used in these "unusual" schools, and an analysis of their operation, their equipment and operating standards, nevertheless yield ideas which can be applied to a traditional school, and can save much trial and error.

It is as though what should be envisaged is a different (not a new) type of school, obtained by progressive mutation of the existing one.

In conclusion, it seems that the aim should be to redeploy resources and change the functional purpose of a number of facilities with a view to achieving new educational objectives.

Theoretical definition of the multi-media self-instructional centre

1. Acquisition by the pupil of control over the instruments and methods which will make him capable of working on his own

1.1 - Experimental psychology, and numerous observations by educational psychologists, allow us to state a number of decisive factors in the acquisition process.

a) It is the individual learner himself who structures his access to knowledge.

b) This self-structuring is done by means of the individual's own activity.

c) However, the individual is not left on his own to organize either his access to knowledge or the process whereby he assimilates this knowledge.

d) The individual passes from one piece of knowledge to another, and from one difficulty overcome to another, through a series of activities each of which is based on precise motivations determined by the awareness of the goal to be reached.

e) It is possible to find one's way about a conceptual field in any one of several ways.

f) The learning activity depends on two separate sequences of determinations: on the one hand, conditions external to the individual, i.e. situations and stimuli which can be described in terms of equipment, organization, order of presentation, procedures, etc., and on the other hand, conditions which are internal to the individual.[1]

1.2 - Each stage of an acquisition process is based on activities for the reception and processing of information. The level and complexity of the intellectual activities involved in providing elements of answers to problem situations, which may or may not have been stated by the individual, appear to require increasingly high standards of ability to process information (location, compilation, analysis, original production).

1.3 - There is no doubt that the obvious problem to be solved is how to define the main function of the multi-media self-instructional centre. It is an *auxiliary* function (helping the pupil to acquire control over the instruments and methods which will make him capable of working on his own). This assistance is further broken down into three typical functions:

a) The first, concerned with information resources, should be technologically adapted to the optimum co-ordination and management of the sources needed for the knowledge sought and the methods which transmit it. What we have in mind is training the pupil in the use of methods and instruments to enable him to acquire information and carry out its processing, and to discover objects, phenomena and laws by himself.

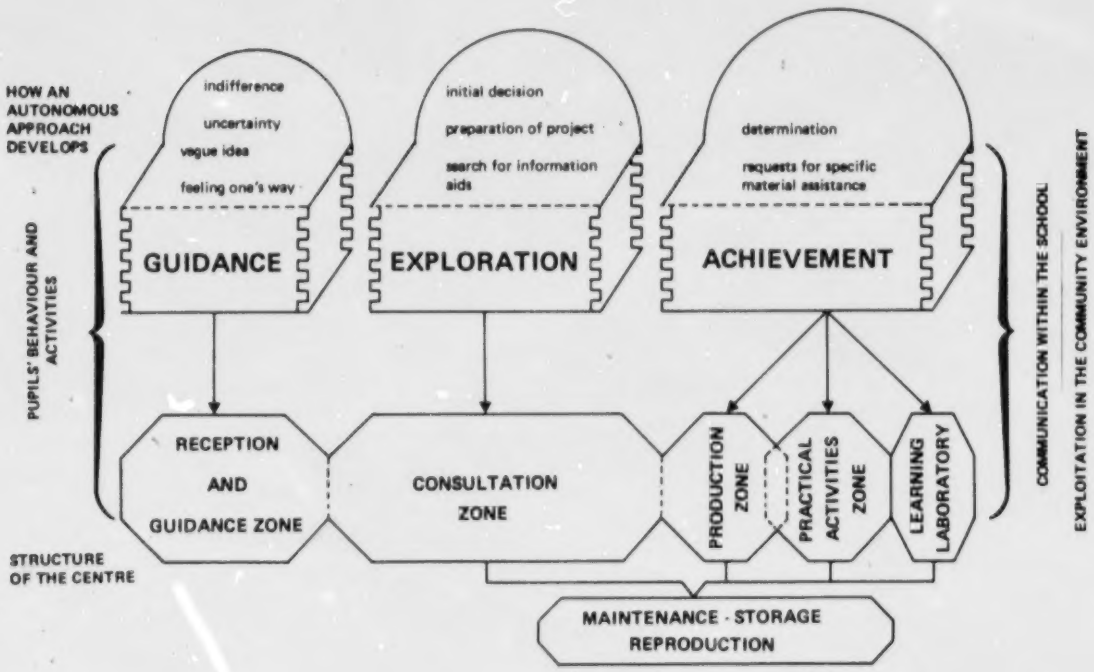
b) The second function is related to the organization and management of autonomous activities (either individual or group activities). A practical application of this function is to facilitate the preparation, development and exploitation of new instructional aids suitable for the acquisition of knowledge by individuals, and frequently based on specific activities.

c) Lastly, the third function relates to an analysis, by the centre, of the acquisition process. This form of control, basically different from that operated by the individual himself when working on his own, is probably the most obvious responsibility of the instruction system. It is performed at various levels and by various means (initial guidance, continuing assessment with feedback, modulated timetables, differentiated forms of supervision, etc.).

1. J.F. Le Ny - NATO symposium in 1968 on current trends in research on programmed instruction.

2. The Multi-Media Self-Instructional Centre seen as a central body which assists pupils in their autonomous activities

2.1 - Simplified diagram of pupils' activities and structure of the centre.



2.2 - Function of aids: (the reader is referred to page 13 of the Guide for the definition of the aids established by R. Quinet).

The instructional function of the aids seems less linked to their obvious specific nature than to the level, both qualitative and quantitative, of their effective participation in the pupil's own activity.

An analytical card index, an instructor's advice as to reading matter, an introductory course on logarithm tables and a dry transfer all play different rôles in learning processes, depending on the pupil's expectations, previous knowledge and/or determination. The following table establishes a system of rules for determining the recommended level of aid at any given time in the course of a project.

Determination of recommended level of aid

		The pupil has still only very limited skills in the various fields of behaviour and in relation to the subject area concerned.
A	A 1 -	Weak determination + precise request: maximum aid Weak determination + vague request: minimum aid
	A 2 -	Strong determination + precise request: medium aid Strong determination + vague request: maximum aid
		The pupil already has a certain degree of control over instruments and methods for working on his own in the various fields of behaviour and in relation to the subject area concerned.
B	B 1 -	Weak determination + precise request: minimum aid Weak determination + vague request: medium aid
	B 2 -	Strong determination + precise request: specific aid Strong determination + vague request: maximum aid

3. Two key questions with variable answers

3.1 - Relative autonomy in the statement and preparation of the project and continually modulated recourse to the centre's aids provide only a partial definition of the pupil's behaviour. Generally speaking, that behaviour is characterized by degrees of liberty which express the potential and real independence of the individual.

In contrast to a traditional type of school, where a system of precise rules provides the framework for activities as a whole, the multi-media self-instructional centre should be able at any time to determine the degree of real independence left to each individual.

This degree of independence should be determined in relation to:

a) the educational objectives of the institution;
b) the contents of curricula;
c) the educational methods being tried out (for instance, the reproduction of models as an introduction to the experimental method);
d) the type of output planned (essays, classical case files, etc.);
e) the time spent at the centre, and how it is split up;
f) the amount of moving about involved for the pupil;
g) the conditions under which equipment is used;
h) production rates;
i) work structures (a single individual, several pupils, couples, a group, etc.);
j) relations with adults;
k) the ecology of behaviour; and
l) all external influences, etc.

While it is relatively easy for the centre to be gradually in a position to provide suitable aids for autonomous activities, it is on the other hand much more difficult for it to create conditions which will favour optimal - hence necessarily differential - degrees of independence compatible with the most productive forms of behaviour.

3.2 - The meeting of experts in June 1974 expressed the hope that certain terminological aspects would be clarified. The diversity of the work now being done and the problems of a social and cultural comparison of concepts, methods and usages make this a difficult task.

We shall stress one point only: autonomous and truly educative activities do not set a premium on either individual work or group work. Similarly, they do not imply any contradition between heuristic methods and algorithmic (or model-creating) ones.

Working methods, like procedures for access to knowledge, are obviously variable from one individual to another, and even for the same individual, from one stage of his intellectual activities and physical actions to another. Consequently the adaptation of the space available, the use of material and human aids, and the school's regulations, as they affect pupils in relation to their work and to other people, should be such as to give pupils the maximum possible flexibility compatible with a minimum of constraints in modulating the nature and form of their activities. The direct consequence is that the centre can only fully perform its rôle of main agent in the conversion of the school if it remains constantly adaptable and able to influence the system of instruction as a whole.

Technical card index

Note

1. The redistribution of timetables and the redeployment of resources and facilities are the two main requirements specified for the centre

1.1 - First requirement: to redistribute the pupil's working time so as to increase the time set aside for working on his own.

Such an increase is only possible if it is agreed to change the school's opening hours. This can be done by extending the daily opening hours (for instance, from 8 to 10 hours a day) and by increasing the number of opening days in the year (for instance, from 35 5-day weeks = 175 days to 45 6-day weeks = 270 days).

The theoretical enrolment capacity of a school depends both on the number of work places it comprises and the time during which it remains open.

To simplify this study we have chosen four possible schedules of opening time (the annual rate of 2,700 hours might be a reasonable target):

	Hours	Days	Weeks	Annual total in hours
A	8	6	40	1920
B	8	6	45	2160
C	10	6	45	2700
D	10	6	50	3000

1.2 - Redeployment of resources and facilities.

It will be recalled that we are working in the environment of an existing school. This means a building of set external size and shape, cohorts of pupils roughly of the same number, and also resources which remain the same (budget, professional staff, equipment).

The architectural structure is usually rigid. The internal areas, on the other hand, can sometimes be fitted up differently. A wise choice of the premises to be used for the centre will take into account the over-all plan of the school, the areas likely to be suitable for the planned functions (consultation, production, storage, etc.), the ease with which pupils have access to them, and so on.

Here we come back to the question which has already been raised:

"one centre or several, and where? "

It is not possible to redeploy all the resources to the same extent without disturbing - and even altering - the very life of the school. Redeploying resources and facilities means allocating some part of them to new activities.

Here the new activities are those of the centre.

The technical card index should bring out what is necessary for the operation of the centre, starting with the inventory which already exists.

2. Composition of the card index[1]

The card index is composed as follows:

a) Green cards: **Situation of the school**
b) Blue cards: **Objectives of the centre**
c) Pink cards: **Computing methods.**

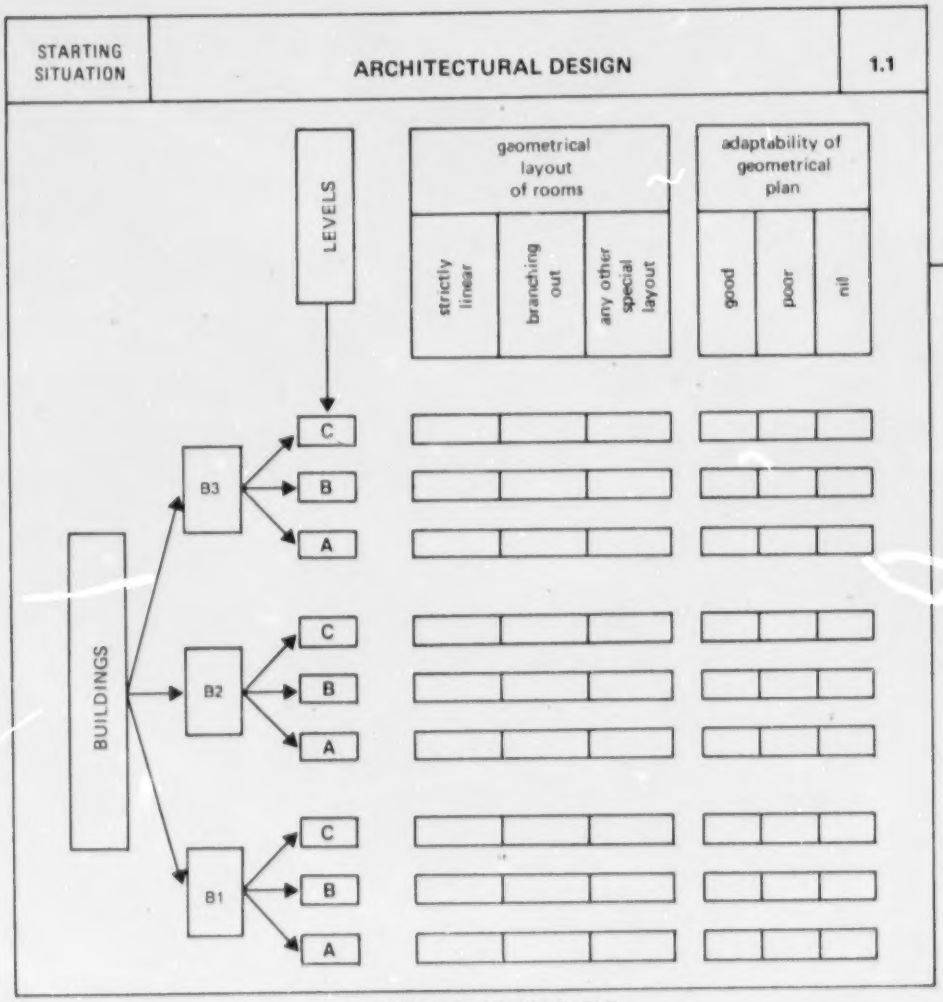
Only the green and blue cards should be filled up.

The cards have been grouped together under nine headings (indicated under the general heading "subject dealt with"):

1 - Location of the centre (1.1, 1.2, 1.3)
2 - Enrolment capacity (2.1, 2.2, 2.3, 2.4, 2.5)
3 - Reference modules (3)
4 - Equipment (4.1, 4.2, 4.3)
5 - Stock of documents (5.1, 5.2, 5.3, 5.4)
6 - Production (6.1, 6.2)
7 - Maintenance and storage (7)
8 - Professional staff (8)
9 - Development (9.1, 9.2)

1. Robert Quinot prepared a technical card index which it is not possible to reproduce here in its entirety. Some of the cards are presented, so as to give the reader an idea of the type of tool proposed.

MULTI-MEDIA SELF-INSTRUCTIONAL CENTRE TECHNICAL CARD INDEX		green cards STARTING SITUATION	blue cards OBJECTIVES	pink cards COMPUTING METHODS
SUBJECT DEALT WITH	ORGANIZATION AND PLAN OF CARD INDEX			
LOCATION OF CENTRE	Architectural design	1.1		
	Corridors and access to different parts of the building	1.2		
	Main uses for each floor of overall area	1.3		
ENROLMENT CAPACITY	Enrolment capacity of the school as a whole	2.1		
	Present distribution of time spent at school	2.2		
	New distribution of time spent at the centre on the basis of the objectives of the centre		2.3	
	Forecast capacity		2.4	
	Calculation of number of work places in the centre			2.5
REFERENCE MODULES	Fitting up the premises for a centre			3
EQUIPMENT	Functional adaptability of furniture	4.1		
	Present audio-visual equipment	4.2		
	Standard equipment in zones for guidance, consulting and processing of information			4.3
STOCK OF DOCUMENTS	Present stock of audio-visual documents	5.1		
	Present stock of documents (books and reviews)	5.2		
	Present stock of other instructional materials	5.3		
	Standard stock of documents per module (consultation zone)			5.4
PRODUCTION	Present production capacity	6.1		
	Workshops and production laboratories (Forecast per module)			6.2
MAINTENANCE AND STORAGE	Standard forecast			7
PROFESSIONAL STAFF	Search for optimum staff ratio for centre			8
DEVELOP-MENT	Forecast budget trends, in constant prices and for same enrolment figures		9.1	
	Development assumptions for the centre		9.2	



1.1

A. HOW TO READ THE TABLE

With a STRICTLY LINEAR layout, the rooms run along a corridor, which is usually the only corridor on the floor.

With a BRANCHING-OUT structure there are different ways of getting about the building, several corridors cross each other, and rows of classrooms are broken up into separate sections.

A concentric layout is an example of a SPECIAL LAYOUT, several rooms opening out on to the same central point.

The absence of any clear geometrical plan, with a huddle of rooms and straggling corridors, is another example of a special layout.

THE ADAPTABILITY OF THE GEOMETRICAL PLAN indicates the possibility of modifying the occupation of the area by moving partitions, knocking down walls, incorporating corridors in rooms, etc.

B. COMMENTS

The first question which arises is where the centre should be located.

It should be easy of access, and if the areas chosen do not exactly correspond to requirements, they should be fitted up as necessary.

The second question is whether there should be one centre or several. It is preferable to have one single site. However, the dispersal of premises in several buildings and on several floors, difficulties in moving about from one place to another (card 1.2), and concentrations of pupils or every-day activities (card 1.3) may result in there being more than one site.

Each of the sites will then tend to become specialized, while one will become the nucleus of the centre.

57

OBJECTIVES	NEW DISTRIBUTION OF TIME SPENT AT THE CENTRE ON THE BASIS OF THE CENTRE'S OBJECTIVES	2.3

1. TRENDS IN WEEKLY DISTRIBUTION OF WORK, ESTABLISHED FOR EACH GROUP OF PUPILS

how pupil spends his working time	PRESENT STATE			OBJECTIVE		
	in the school	outside the school	total	in the school	outside the school	total
attending classes						
working on his own						
total						

2. PUPIL'S WORKING TIME (FOR EACH GROUP OF PUPILS) IN THE MULTI-MEDIA SELF-INSTRUCTIONAL CENTRE ON THE BASIS OF THE NEW EDUCATIONAL ASSUMPTIONS

groups	weekly distribution of timetable of activities or work by the pupil on his own						time spent attending classes	total time spent at school
	multi-media self-instructional centre				miscellaneous	total		
	complement to instruction	independent activity	learning laboratory	total				
G1								
G2								
G3								
G4								
G5								
T								

2.3

A. HOW TO READ THE TABLE

The redistribution of the pupil's working time is one of the basic objectives of the changes introduced by the centre.

Three types of activity have been chosen as characteristic of the centre:

1. Activities which are complementary to traditional instruction (planned and assessed accordingly).

2. Activities which are independent of traditional instruction. These are conducted on the initiative of the pupil, who is provided with self-assessment facilities, and is to a large extent responsible for the development of the activities.

3. The learning laboratory, in which learning processes, which are entirely guided, can take place either as complementary to instruction or on the pupil's initiative.

B. COMMENTS

Obviously, other educational assumptions may be chosen. Above all, care must be taken to avoid considering the centre's timetable of activity as all of a piece, since it in fact represents different types of learning which have different impacts on the type of instruction chosen.

See also card 9.2 for the planned development of the centre.

STARTING POINT	PRESENT AUDIO-VISUAL EQUIPMENT									4.2
BRIEF DESCRIPTION	EQUIPMENT AS A WHOLE	working condition		equipment assigned for special use	equipment for general use	rate of use			transferable to centre
		N.W. or poor condition	fair good			+	?	—	
slide viewer									
slide projector									
episcope									
overhead projector									
8/super 8 mm projector									
8/super 8 mm with built-in screen									
16 mm projector									
sound slide equipment									
television set									
record-player									
tape recorder									
mini cassette									
video-tape recorder									
language laboratory equipment									
teaching machines									

4.2

A. **HOW TO READ THE TABLE**

N.W. means "not working".

In the centre the pupils use the apparatus themselves. Only apparatus recognized as being in "fair" or "good" working condition can be used with profitable results.

By EQUIPMENT ASSIGNED FOR SPECIAL USE is meant apparatus reserved permanently for one or more users.

The RATE OF USE is subjective, since there are no checks showing the rate of use over a fairly long period.

A qualitative compromise may be found by taking account of both the number of hours of use stated and the determination of the group of "teacher-pupils" to integrate audio-visual aids into their educational practice.

Legend: + refers to apparatus for which the rate of use appears satisfactory; ? to apparatus for which the rate of use is not known; and — to apparatus for which the rate of use is obviously insufficient.

B. **COMMENTS**

In conclusion, the right-hand column should show items of equipment which are transferable to the centre, i.e. those which are in good working condition and which are at present insufficiently used.

STARTING SITUATION	PRESENT STOCK OF DOCUMENTS (BOOKS AND REVIEWS)										5.1
1. REVIEWS ENCYCLOPAEDIAS DICTIONARIES	youth	popularization	special subjects	highly specialized subjects	of general interest	OVER-ALL	breakdown of current use				
							where used		external loans		
							concentrated	dispersed	yes	no	
reviews (titles)											
encyclopaedias dictionaries											
2. WORKS OF AN INSTRUCTIONAL NATURE	elementary schools	intermediate schools	secondary schools	higher education							
school books											
basic works classical works											
3. ALL OTHER WORKS BY U.D.C. CLASSIFICATION	0	1	2	3	4						
	5	6	7	8	9						

A. HOW TO READ THE TABLE

The proposed classifications (for instance, elementary schools, intermediate schools, etc.) are by way of indication. They should be changed depending on the public primarily served by the school. In the case of a teacher-training centre the main headings will be, for example, the sociology of education, educational psychology, etc.

U.D.C. means "Universal Decimal Classification" and the code numbers, 0, 1 . . . 9 are those of the U.D.C.

B. COMMENTS

This inventory relates to all books and reviews held by the school, regardless of where they are stored and the methods by which they are made available to pupils and teachers.

The concentration of documents in the centre does not seem to exclude the maintenance of special sections, provided that it is proved that there is a need for them.

THE IDEA OF A LENDING LIBRARY SHOULD NOW BE SET APART.

There is a great temptation to separate the lending library from the centre's stock of documents.

Whatever the course adopted, a very clear distinction should be drawn between the utilization procedures of the centre and those of the library.

STARTING SITUATION	PRESENT STOCK OF AUDIO-VISUAL MATERIAL									5.2
UTILIZATION METHODS		CLASSIFICATION				STOCK AS A WHOLE			WHERE STORED	
		1	2	3	4	total	breakdown		centrally	dispersed
A. Teacher essential B. Can be used by pupil without any aid C. With accompanying document T. Total (irrespective of method)							acquisition	product by school		
slides	A									
	B									
	C									
	T									
transparencies	A									
	B									
	C									
	T									
8 mm or super 8 mm films	A									
	B									
	C									
	T									
16 mm films	A									
	B									
	C									
	T									
sound slides	A									
	B									
	C									
	T									
sound recordings (tape recorder, minicassette)	A									
	B									
	C									
	T									
video recordings	A									
	B									
	C									
	T									

5.2

A. HOW TO READ THE TABLE

The headings of the CLASSIFICATION (1, 2, 3, 4) are not specified.

These headings will be devised in the light of the service primarily provided (e.g. vocational retraining), disciplines (e.g. technology) or major information topics (e.g. economics in the world today) which appear best suited to the optimal use of the documents.

The UTILIZATION METHODS are as follows:

A: teacher's presence essential;

B: can be used in existing state, without the teacher's presence;

C: can be used by the pupil on his own, but with the aid of an additional accompanying document.

Though the majority of audio-visual aids have been devised to accompany a talk by the teacher, it is essential that teachers should conduct systematic viewing in order to make sure that the utilization methods are compatible with independent work by the pupil.

B. COMMENTS

In conclusion, it is desirable to set apart those audio-visual aids which can be transferred to the centre, i.e. those which should not necessarily be kept in special sections to support traditional forms of instruction, and the use of which does not require the presence of the teacher.

OBJECTIVES	FORECAST OF BUDGET TRENDS, IN CONSTANT PRICES AND FOR SAME ENROLMENT FIGURES	9.1

FUNDS FOR EQUIPMENT AND OPERATION THAT MAY CONCERN THE CENTRE

	PRESENT AMOUNT	prospective trends of regular budget									prospective special allocations	
		first year			second year			third year			in kind	in cash
		−	=	+	−	=	+	−	=	+		
EQUIPMENT												
– school furniture												
– audio-visual apparatus												
– printing/reproduction												
– workshop and laboratory equipment												
– other instructional materials												
– miscellaneous												
– TOTAL												
MATERIAL												
– books, reviews, documents												
– audio-visual documents												
– other instructional documents												
– miscellaneous												
– TOTAL												
OPERATION												
– audio-visual												
– printing, reproduction												
– school supplies												
– workshops and laboratories												
– external work												
– light work on the interior												
– maintenance												
– miscellaneous												
– TOTAL												

2. VALUATION OF PRESENT CAPITAL	FORECAST OF CAPITAL INVESTMENT		
	first year	second year	third year